List of Appendices

Appendix A: Opportunities Matrix
Appendix B: Workshop Summaries
Appendix C: iTrees Analysis
Appendix D: Plant Palette
Appendix E: Tree Planting and Care Recommendations
Appendix F: Clean and Green Vacant Lots
Appendix G: Industrial Area Greening

appendix a

OPPORTUNITIES MATRIX

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Brad Freeman Trail:							
Improve the existing informal trail to connect the gap between the Brad Freeman Trail and Highway 162 (located in the southwest corner of the Highway 162/Highway 70 southbound on-ramp intersection, in Riverbend Park).	Low	High	High	Medium	Low	Moderate	Feasibility: based on input at community workshop, there is protected habitat in this area.
Connect gap in Brad Freeman Trail under Green Bridge, between Veterans Hall and the Nature Center. This portion of the trail should meet ADA standards.	Medium	High	High	High	Low	Moderate	Feasibility/cost: need ROW, but small section.
Continue Brad Freeman Trail to the south as far as Gridley, returning on the other side of the Feather River.	Low	Medium	Low	Medium	Low	Prohibitive	Feasibility/cost: need to identify trail route and acquire ROW.
Conduct maintenance on the western section of the Brad Freeman Trail north of the Forebay to remove thorny vegetation that makes it impassable to bikes.	High	High	Low	Medium	Low	Low-cost	
Manage regular flooding on Brad Freeman Trail: 1) just east of Bedrock Park, in the dip; and 2) in Riverbend Park, west of the roundabout, heading into the park off Montgomery.	High	High	Medium	Medium	Low	Low-cost	
Improve markings to Brad Freeman Trail above the fish dam.	High	High	Low	Medium	Low	Low-cost	
Post maps of the Brad Freeman Trail online in an easier to find place.	High	High	Low	Medium	Low	Low-cost	This could be combined with the Oroville area bike map update (see below).
Finish Dan Beebe horse trail.	Medium	Medium	Low	Low	Low	Prohibitive	Cost: trail has been started, but still a significant cost to develop new trail sections.
Tie bridge over spillway to State parks (horse trails, bring in triathlon, bike race, etc.).	Medium	Medium	Medium	Low	Low	Prohibitive	Feasibility/cost: need significant ROW.
Convert the abandoned railroad ROW in South Oroville to a regional bike facility, provide a paved bike trail with plantings in the 50 feet owned by the City to either side of the former track, and continue south to the city limit or further. Provide lighting and cameras for public safety.	Medium	Medium	Medium	Medium	Medium	Moderate	Feasibility/cost: rails already removed from ROW, but long section requires trail construction, and there are safety issues. Issue: connectivity from an economically-disadvantaged area.
Power lines all have easements and can be used for trails and hiking. This includes the PG&E line where it crosses Ophir Road.	Medium	Medium	Medium	Medium	Medium	Moderate	Feasibility/cost: ROW in place, but requires coordination with energy providers. Issue: connectivity from an economically-disadvantaged area.
Create more off-road bicycle trails in the foothills.	Low	Medium	Low	Low	Low	Prohibitive	Feasibility/cost: need to identify trail locations and acquire ROW.
Create a bikeway from Downtown to Lake Oroville along the ridge.	Low	Medium	Low	Medium	Low	Prohibitive	Feasibility/cost: need to identify bikeway route and acquire ROW.
Consider opening equestrian-only trails to limited bike/pedestrian use.	High	High	Medium	Low	Low	Low-cost	One possible approach could be to assign even-numbered days for equestrians only and odd numbered days for all users.
Provide a pedestrian and bicycle bridge over the Feather River to connect the western part of the Downtown to recreational opportunities north of the city.	Low	Medium	High	Medium	Low	Prohibitive	Feasibility/cost: need ROW.
Provide a bike path along the portion of the Greenline tour route that runs along Orange Avenue and Oro Dam Boulevard E to the Lake Oroville Visitors Center.	Medium	Medium	Medium	Medium	Low	Prohibitive	

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Provide paved sidewalks and Class II bike lanes along Highway 162, including the following:	Medium	High	High	Medium	High	Moderate	Feasibility/cost: ROW exists, but requires Caltrans coordination. Note: a bikeway connection to Riverbend Park is part of the Feather River revitalization project. Issue: pedestrian/bicycle safety for major corridor; also serves an economically-disadvantaged area.
Between Lower Wyandotte and Foothill Blvd.							
Between Lincoln and Veatch.							
Connecting to Riverbend Park.							
From Orange Ave. to Highway 70.							
Provide paved sidewalks along Lower Wyandotte between Highway 162 and Oroville Garden Ranch Road.	High	High	High	Medium	Low	Moderate	
Provide sidewalks, landscaping, and parking along Broderick Street.	High	Medium	Medium	Medium	Low	Moderate	
Strengthen access to the river from Montgomery Street.	Medium	High	Medium	Medium	Medium	Moderate	Issue: economic development in Downtown.
Provide sidewalks and bike lanes along Table Mountain Blvd. from Nelson Avenue to Montgomery Street.	Low	High	Low	Medium	Medium	Prohibitive	Feasibility/cost: narrow roadway in this section; requires additional ROW. Issue: bicycle safety.
Feather River Boulevard Revitalization/Complete Street Project.	High	High	Medium	Medium	Low	Low-cost	Feasibility/cost: this is an existing, funded project.
Connect Nelson Park to Thermalito Forebay Picnic Area/Aquatic Center with an 8-12' wide path, including a bridge over the canal. This facility would connect the Nelson complex with a potential future water park at the Forebay.	Low	High	High	Medium	Low	Prohibitive	Feasibility/cost: requires crossing of Thermalito Forebay; would need approval from State. The Supplemental Benefits Fund Committee has considered this project.
Provide bike lanes along Ophir Road.	Medium	High	Low	Medium	Low	Prohibitive	
Connect and expand sidewalks in the City's industrial area.	Medium	Medium	Low	Medium	Low	Moderate	
Provide a bike path along Lower Wyandotte from Forest View to Feather Falls casino.	Medium	Medium	Low	Medium	Low	Moderate	
Schools:							
Provide sidewalks around Ishi Hills School, on Foothill Blvd from Olive Hwy to Oro Dam Blvd East.	Medium	High	High	Medium	Medium	Moderate	Issue: school safety.
Provide sidewalks around Stanford Avenue School, including portions of Oro Dam Boulevard.	Medium	High	High	Medium	Medium	Moderate	Issue: school safety. Update: this project was funded and is underway in 2015.
Provide shaded sidewalks to connect Oakdale Heights Elementary School, Las Plumas High School, Helen Wilcox Elementary School, and Golden Hills Elementary School. (Connection from western extent of Las Plumas Ave. to Lower Wyandotte Rd., and also south on Autrey Ln. from Las Plumas Ave. to Via Canela Rd. Around Oakdale Heights, provide sidewalks and shading from Farley, Walner, and Rosina.) Provide a pedestrian island in front of Las Plumas High School.	Medium	High	High	Medium	High	Moderate	Issue: school safety in an economically-disadvantaged community.
Provide shaded sidewalks to connect schools to convenience store at Monte Vista and Lincoln. (Add connection from western extent of Monte Vista Ave to Autrey Lane.)	Medium	High	High	Medium	High	Moderate	Issue: school safety in an economically-disadvantaged community.
Provide a bike path and sidewalk improvements along Oro Bangor Road from Southside to Las Plumas High School.	Medium	High	High	Medium	High	Moderate	Issue: school safety in an economically-disadvantaged community.
Create safe pedestrian and bike connections through the "stump field" between Southside and Las Plumas High School.	Low	Low	Medium	Medium	High	Prohibitive	Feasibility/cost: privately-owned land; would require purchase or work into development plan; public safety issues. Issue: school safety in an economically-disadvantaged community.
Connect the Southside neighborhood to Las Plumas High School via the powerline easement.	Medium	Medium	High	Medium	High	Moderate	Feasibility/cost: ROW in place, but requires coordination with energy providers. Issue: school safety in an economically-disadvantaged community.
Fill in the sidewalk gaps along Fallbrook Avenue, since it is used as a route to school in the Southside neighborhood.	High	High	High	Medium	High	Moderate	Issue: school safety in an economically-disadvantaged community.

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Provide pedestrian and safety improvements with shade at other schools including Central Middle School, Wyandotte Elementary School, Golden Hills Middle School, and Ophir Elementary School.	Medium	High	High	Medium	Medium	Moderate	Issue: school safety.
Provide pedestrian and safety improvements, fill sidewalk gaps, and provide shade linking schools in Thermalito with residential areas on the east side of SR-70, including under SR-70, along Nelson and Grand Avenues, and to/around Nelson Avenue Middle School, Plumas Avenue School and Sierra Avenue School.	Medium	High	High	Medium	High	Moderate	Issue: connects affordable housing to schools; history of pedestrian fatalities.
Provide pedestrian improvements from Oroville HS to the roundabout, along Washington Street.	Medium	High	High	Medium	Medium	Moderate	Issue: school safety.
Southside:							
Improve connection between Southside and Downtown along Lincoln and Myers.	Medium	Medium	High	High	High	Moderate	Issue: connects an economically-disadvantaged community to employment area.
Connect Southside (Lincoln area) to Riverbend Park with a bike trail.	Low	Medium	High	Medium	Medium	Prohibitive	Issue: connects an economically-disadvantaged community to recreation opportunities.
Install curbs, gutters, sidewalks, and lighting all around Southside, particularly around MLK Park and Central School.	Medium	High	High	Medium	Medium	Prohibitive	Issue: pedestrian safety in an economically-disadvantaged community.
Turn alleys into useable connectors by cleaning up debris, planting and maintaining vegetation, and making people feel safe through lighting and cameras.	High	Medium	High	Medium	Medium	Moderate	Feasibility/cost: ROW exists; need to fund improvements and maintenance. Issue: connectivity in an economically-disadvantaged community.
Close alleys to public use.	Low	Low	Medium	Low	Medium	Low-cost	Feasibility: Difficult to implement due to number of adjacent properties and difficult to enforce. Issue: public safety in an economically-disadvantaged community. Low funding for enforcement.
Install sidewalks, bike routes and shade trees on Myers Street between Highway 162 and Lincoln; coordinate with power line undergrounding project.	High	High	High	Medium	Medium	Moderate	Feasibility/cost: coordinate with funded power line undergrounding project. Issue: pedestrian/bicycle safety in an economically-disadvantaged community.
Provide sidewalks, bike lanes and trees along Wyandotte, Burlington & Columbia (Wyandotte is most critical: has lots of pedestrian activity, including students).	Medium	High	High	Medium	Medium	Prohibitive	Issue: pedestrian/bicycle safety in an economically-disadvantaged community.
Provide sidewalks on Lincoln Avenue between Clinton and Idora.	Medium	Medium	High	Medium	Medium	Moderate	Issue: pedestrian safety in an economically-disadvantaged community.
Improve pedestrian and bicycle safety along Spencer.	Medium	High	High	Medium	Medium	Moderate	Issue: pedestrian safety in an economically-disadvantaged community.
Add pedestrian amenities at Myers and Wyandotte, including a lighted bus shelter.	High	High	High	Medium	Medium	Moderate	Issue: pedestrian safety in an economically-disadvantaged community.
Open Baggett-Marysville Road at railroad tracks to pedestrian/bicycle use to connect Southside to industrial area, and install lighting for public safety.	Low	Low	High	High	High	Prohibitive	Feasibility/cost: requires railroad crossing; public safety issues. Issue: connects an economically-disadvantaged community to employment area.
Improve bus stops with better lighting, landscaping, and other amenities throughout the Southside neighborhood.	High	Low	Low	Medium	Medium	Low-cost	Issue: pedestrian safety in an economically-disadvantaged community. See BCAG Bus Stop Improvement Plan (none in Southside are listed as priority sites).
Connect Helman, Summers, Rose, and Parks Streets to Lincoln Blvd.	Medium	Low	Low	Low	Low	Moderate	Feasibility/cost: ROW, Lincoln Blvd access issues.
Create an Oroville-Area Bike Map to encourage use of existing bike/pedestrian facilities.	High	High	Medium	Medium	Low	Low-cost	BCAG created a similar map for the Chico area: http://www.blinetransit.com/Resources/Bike-Maps/index.html
Provide pedestrian-scale lighting along Montgomery Street west of the traffic circle.	High	Medium	High	Medium	Low	Low-cost	
Provide sidewalks and bike lanes along Montgomery Street east of the traffic circle to connect the Brad Freeman trail to the existing bike lane along Orange Avenue. Include tree plantings for shade and traffic calming measures to slow traffic.	Medium	Medium	High	Medium	Low	Moderate	

Opportunities	Feasibility						Notes
	Technical	Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	
Improve the existing bike path along Foothill Boulevard south of Olive Highway, and extend it further southeast along Foothill to the Urban Area boundary.	Medium	Medium	Medium	Medium	Low	Moderate	
Provide an ADA-compliant multi-modal connection from the Table Mountain Boulevard/County Center Drive intersection to the Forebay Picnic Area via Table Mountain Boulevard and Garden Drive.	Medium	High	High	Medium	Medium	Moderate	

Opportunities	Feasibility		Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
	Technical	Funding					
Add street (shade) trees, flowers, and plantings along existing and future sidewalks and in median along Oro Dam Blvd.	Medium	Medium	High	Medium	Medium	Moderate	Feasibility/cost: requires coordination with Caltrans and construction of planting strip for long section of roadway. Issue: beautification and cooling along a major corridor; also serves an economically-disadvantaged area.
Green the proposed bikeway along Oro Dam Blvd. from Orange Ave. to Highway 70.	High	Medium	High	Medium	Medium	Low-cost	Feasibility/cost: can work into planned bikeway project. Issue: greening and cooling along a major corridor; also serves an economically-disadvantaged area.
Beautify and green Virginia Street.	High	Low	High	Medium	Low	Low-cost	
Add trees/beautification/riparian restoration along the river and levee, particularly from the Veterans Memorial through the Downtown area, including between Riverbend Park and Oro Dam Bridge. Coordinate with Gateway project. Incorporate pedestrian-scale lighting into planting plans.	High	High	High	Medium	Medium	Low-cost	Issue: economic development in Downtown.
Add street trees and landscaping to green the Downtown, particularly the Arts, Culture, and Entertainment District (connect all museums and historic sites).	High	Medium	High	Medium	Medium	Low-cost	Issue: economic development in Downtown. The City is already planting trees and landscaping, and is developing a zoning overlay for the Arts, Culture, and Entertainment District.
Add street trees and plantings along Myers south of Oro Dam Blvd, all the way through the Southside commercial retail area, which needs a facelift and trees (as do the vacant properties and parking lots on the surrounding corners); coordinate with power line undergrounding project.	High	Medium	High	Medium	High	Low-cost	Feasibility/cost: can coordinate with power line undergrounding project. Issue: beautifies and cools connection between an economically-disadvantaged community and employment area.
Restore and manage water in Dry Creek, an ephemeral drainage through the City's industrial area.	Medium	Medium	Low	Medium	Low	Moderate	
Provide plantings and shade trees along the Feather River Boulevard Revitalization corridor.	High	Medium	High	Medium	Low	Low-cost	Feasibility/cost: can coordinate with the funded Feather River Boulevard Revitalization project.
Restore and enhance riparian vegetation and trees along the Feather River corridor and levees, on both sides of the bike paths. Coordinate with DWR and FERC.	High	High	Medium	Medium	Low	Low-cost	
Provide plantings and shade trees along and in the median of Lincoln; incorporate with stormwater management.	High	Medium	High	Medium	Low	Low-cost	

Planting Sites

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Provide shade/temporary parks on City-owned land in Downtown until needed for development.	High	Low	High	Medium	Low	Low-cost	This includes the cluster of parcels that are shown as public vacant land on the map that includes APN 012-032-008, and the two parcels owned by Redevelopment to the west.
Maintain and landscape State buildings such as CDF headquarters and fish hatchery.	Medium	Low	Medium	Medium	Low	Low-cost	Feasibility: requires coordination with State agencies.
Plant trees at schools (with student participation).	High	Medium	High	High	Low	Low-cost	
Plant shade trees around Oroville High School, particularly at the corners with Linden Street, and provide plantings, rails, and stairs on Bridge Street next to the high school.	High	Medium	Medium	Medium	Low	Low-cost	
Green the Oroville Inn grounds (historic site located at 2066 Bird Street).	High	Low	High	Medium	Low	Low-cost	
Green the City-owned strip of land on west side of Lincoln Blvd between Lincoln and the abandoned RR track.	High	Medium	Low	Medium	Low	Low-cost	APNs 035-210-001 and 035-220-001.
El Medio Fire Department site: provide shade for farmers market and community events. Enhance the existing demonstration garden.	High	Medium	High	Medium	Medium	Low-cost	Issue: shading/cooling for important community feature in economically-disadvantaged community.
Green the African American museum property until they build the museum.	High	Low	High	Medium	Medium	Low-cost	Issue: shading/cooling for important community feature in economically-disadvantaged community.
Green the 5th Avenue rock piles temporarily until Super Wal-Mart is constructed.	High	Low	High	Medium	Low	Low-cost	
Plant the intersection at Myers and Wyandotte for beautification as a City entryway and neighborhood commercial center. Planting should enhance public safety and celebrate the Southside's history and pride.	High	Medium	High	Medium	Low	Low-cost	
Plant and beautify the Gateway site on the north side of Montgomery at Feather River Boulevard.	High	Medium	High	Medium	Low	Low-cost	
Expand, plant and shade the existing Saturday Farmer's Market site at the Myers/Montgomery municipal parking lot, to include the top of the levee and the parking area on the levee.	Medium	High	Low	Medium	Low	Low-cost	Note: the location of this farmer's market may change.
Plant shade trees at the CHIP housing site on Tehama between 6th and 8th Streets.	High	Medium	High	Medium	Low	Low-cost	
Create an oak tree restoration/mitigation site in the City's industrial area (e.g. on the City-owned property jus west of the Western Pacific Railroad).	Medium	Medium	Medium	Medium	Low	Low-cost	
Green the Gold Town Plaza on Oro Dam Hwy by planting trees and landscaping.	Low	Low	Low	Medium	Low	Moderate	Feasibility: requires partnership with plaza owner. 2450 Oro Dam Boulevard, NW corner.
Green the long and narrow area past the movie theater that has dilapidated commercial development with bike/walking trail by old cemetery, water feature, docks to get to river.	Low	Low	Medium	Medium	Low	Prohibitive	Feasibility: requires partnership with private landowner(s).
Once a site for the Hmong Cultural Center has been identified and purchased, green the site until the center has been built so that it can be used for Hmong cultural celebrations, such as the New Year celebration, community events, and weddings, in the meantime.	High	Low	High	Medium	Low	Low-cost	
Provide plantings along Highway 70 at the southerly entrance to Oroville.	High	Low	High	Medium	Low	Low-cost	

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Riverbend Park:							
Improve park entrance with new landscaping and sidewalks.	High	Medium	High	Medium	Low	Low-cost	
Establish a community garden within the park.	Low	Medium	Low	High	Low	Low-cost	Feasibility: need to address homeless population in park.
Plant shade trees around soccer fields.	High	Medium	Medium	Medium	Low	Low-cost	
Provide shade at Pat Alley Memorial Dog Park (located in Riverbend Park).	High	Medium	Medium	Medium	Low	Low-cost	
Conduct other improvements and enhancements not yet identified and general maintenance.	High	Medium	Medium	Medium	Low	Low-cost	
Bedrock Park Revitalization							
Green the upper parking lot.	Low	High	Low	Medium	Low	Low-cost	Feasibility: potential lease and management issues.
Fix tennis courts – open them up so they're not used by homeless people and drug users.	High	High	High	Medium	Medium	Low-cost	Issue: public safety in community park.
Add lighting.	High	High	Medium	Low	Medium	Low-cost	Issue: public safety in community park.
Provide shade, play areas, BBQ areas, and community garden in open area in Feather River Recreation and Activity Center. Provide gardening classes with the community garden.	Medium	High	Medium	High	Low	Low-cost	APN 035-240-099. The feasibility of future cahnges to this site is unclear.
Plant new trees for shade and improve irrigation at the Nelson ballfields complex.	High	Medium	High	Medium	Low	Low-cost	
Maintain tennis courts that serve the two Southside schools (no nets, grass growing in the paving).	High	High	Medium	Medium	Medium	Low-cost	Issue: access to physical exercise in economically-disadvantaged community.
Martin Luther King Park:							
Provide a facelift and maintenance – prioritize this over a new park in Southside.	High	High	Medium	Medium	Medium	Low-cost	Issue: access to parks/physical activity in economically-disadvantaged community.
Install accessible walkways and lighting at MLK Park (FRRPD got grant, but lost funding).	High	High	High	Medium	Medium	Low-cost	Issue: access to parks/physical activity in economically-disadvantaged community. Accessible walkways are already being installed.
Provide shading, sidewalks, public safety and other improvements.	High	High	Medium	Medium	Medium	Low-cost	Issue: access to parks/physical activity in economically-disadvantaged community.
Acquire a well	Medium	Medium	High	Medium	Medium	Moderate	
Renovate the strip of unused City land at Prospect High School as a playing field or open area.	High	Medium	Medium	Medium	Low	Low-cost	
Plant trees as a windbreak and for shade by the ball fields al Las Plumas High School.	High	Medium	Medium	Medium	Medium	Low-cost	Issue: access to parks/physical activity in economically-disadvantaged community.
Support and provide education at the Wyandotte School community garden.	High	Low	High	High	Medium	Low-cost	Issue: Access to healthy food/agricultural education in economically-disadvantaged community.
Build community or demonstration gardens at any or all Oroville schools. Wyandotte and Sierra School already have gardens. Prospect High School and Nelson Avenue Middle School are good opportunities. Emphasize family and community involvement. Community gardens should have plots for individual families as well as a community plot.	High	Medium	High	High	Low	Low-cost	
Develop a local facility to create and distribute garden compost for community gardens in Oroville.	Medium	Medium	Low	High	Low	Prohibitive	Feasibility/cost: requires private investment.
Build a community garden at the Southside Community Center, in Thermalito, or at schools.	High	Medium	High	High	Medium	Low-cost	Issue: Access to healthy food/agricultural education in economically-disadvantaged community.
Clean and create a plan to avoid dumping under the Green Bridge.	High	Medium	High	Medium	Low	Moderate	Issue: dumping hazards in Downtown.
Clean up and fence open ditch at the east end of Mitchell and on Oro Dam Blvd. east of Walgreens; manage flooding issues.	Medium	Medium	Medium	Medium	Low	Moderate	

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Build Memorial Park (adjacent to Veteran's Hall).	High	High	High	High	Low	Moderate	Feasibility/cost: park design complete, land acquired, construction underway.
Create another neighborhood park in the Southside neighborhood, particularly south of MLK Park, near Las Plumas High School.	Medium	Medium	Medium	High	Medium	Prohibitive	Cost: requires purchase of land for park. Issue: access to parks/physical activity in economically-disadvantaged community.
Create multiple pocket parks in the Southside neighborhood.	Medium	Medium	Medium	High	Medium	Moderate	Issue: access to parks/physical activity in economically-disadvantaged community.
Need park east and south of Hewitt Park: possibilities include near the hospital, at the corner of Oro Dam Blvd and Stanford Ave, or by Oro Dam Blvd and Oro Bangor Hwy.	Medium	Medium	Medium	High	Low	Prohibitive	Cost: requires purchase of land for park.
Potential park site on vacant lots at Myers and Wyandotte.	Medium	Low	Medium	High	Medium	Prohibitive	Cost: requires purchase of land for park. Issue: access to parks/physical activity in economically-disadvantaged community.
Potential park site on vacant land at Lincoln and Myers.	Medium	Low	Medium	High	Medium	Prohibitive	Cost: requires purchase of land for park. Issue: access to parks/physical activity in economically-disadvantaged community.
Potential park site on vacant land between Las Plumas High School and Oakdale Elementary School.	Medium	Low	High	High	Medium	Prohibitive	Cost: requires purchase of land for park. Issue: access to parks/physical activity in economically-disadvantaged community.
Myers and Montgomery has unused bus turnaround that could have community seating area with umbrellas, tables, corner deli, café, also used by municipal auditorium.	Medium	Low	Low	Medium	Medium	Prohibitive	Issue: economic development in Downtown.
Build a passive recreation area for equestrian or dirt bike uses at the former Western Pacific Roundhouse site. Consider using this area for special events (e.g. carnivals) and/or a railroad museum.	Low	Medium	Medium	High	Medium	Prohibitive	Feasibility/cost: requires purchase of land from or partnership with railroad; potential railroad compatibility and public safety issues. Issue: access to parks/physical activity in economically-disadvantaged community.
Create a floating pier on the Feather River for people to walk, fish, boat, swim, sit or enjoy the scenery.	Low	High	Medium	Medium	Low	Moderate	Feasibility: requires coordination with DWR/FERC; potential conflicts with other uses or habitat.
Create a water park, mini-golf, or other recreation destination on the north bank of the Feather River on the terrace across from Downtown/Bedrock park. Provide summer activities to draw tourists.	Medium	High	Medium	Medium	Low	Prohibitive	Feasibility/cost: requires private investment. The Supplemental Benefits Fund Committee has considered similar projects.
Use stormwater detention ponds for active recreation fields during the dry months.	High	Medium	Medium	Medium	Low	Low-cost	
Build community garden at 711 Montgomery, a City-owned site.	Medium	Medium	High	High	Low	Low-cost	Feasibility: requires site redevelopment. APN 012-064-001.
Build community garden in the open area at Nelson Ave and Bridge Street.	High	Medium	High	High	Low	Low-cost	
Build a park in the flood plain off Kelly Ridge Road	Medium	Low	Low	High	Low	Prohibitive	

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Fix stormwater issues along Ruddy Creek.	Medium	Medium	Medium	Medium	Low	Moderate	
Manage flooding in creek west of Lower Wyandotte Road at Las Plumas Ave. (tributary to Wyman Ravine).	Medium	Medium	Low	Medium	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Develop a wetlands enhancement site where the PG&E lines cross Ophir Road (as noted in the Recreational Trails matrix, this is also a bike path opportunity).	Medium	Medium	Low	High	Low	Moderate	Feasibility/cost: requires coordination with PG&E.
Enhance the City detention ponds west of South Oroville for conservation purposes.	Medium	Medium	Low	High	Low	Moderate	
Manage street and alley drainage problems throughout the Southside neighborhood, including the following specific locations:	Medium	High	High	High	Medium	Prohibitive	Issue: flooding in economically-disadvantaged community.
Open ditch and culvert running east-west through the Southside neighborhood along Oro Bangor Highway and Ithaca Street.	Medium	High	High	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage drainage between Oro Bangor Highway and Greenville Street.	Medium	High	High	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Potential detention basin site at Lincoln and Myers.	Medium	Low	Low	High	Medium	Prohibitive	Cost: would require purchase of privately-owned site. Issue: flooding in economically-disadvantaged community.
Baggett-Marysville Road.	Medium	High	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Oro-Bangor off of Lincoln, across from olive cannery.	Medium	High	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Myers and Wyandotte.	Medium	High	High	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
End of Elgin Road by abandoned railroad ROW.	Medium	High	High	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Enhance drainage detention and create a management plan for drainage through the	Medium	Medium	Medium	High	Medium	Moderate	Feasibility: would require partnership with private landowner. Issue: flooding in
Enhance drainage and detention just west of Elgin and Fort Wayne along the UP RR ROW south to the rail yard.	Medium	Medium	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage drainage at the A Street/Spencer Street intersection.	Medium	Medium	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage drainage in the alleys between A and B Streets.	Medium	Medium	High	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage drainage between Wyandotte and B Street.	Medium	Medium	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage drainage currently routed through a culvert along Ithaca.	Medium	Medium	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Address the drainage problem west of Las Plumas High School: the current culvert is not sufficient.	Medium	Medium	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage drainage between Lincoln Boulevard and the rail yard.	Medium	Medium	Medium	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Detain water east of the Southside neighborhood.	Medium	Medium	High	High	Medium	Moderate	Issue: flooding in economically-disadvantaged community.
Manage stormwater in Thermalito.	Medium	Medium	High	High	Low	Moderate	
Address stormwater issues that occur at intersection of Oro Dam/Olive Highway, continuing west across the adjoining block that contains Bank of the West and La Comida to Spencer Avenue at Raley's.	Medium	Medium	Low	High	Medium	Moderate	Issue: flooding in an important retail area.
Address stormwater issues on Feather River Boulevard at the south end of the city limits, approximately where the roadway crosses Dry Creek.	Medium	Medium	Low	High	Low	Moderate	
Address stormwater issues at Oro Dam Blvd. crossing with Dry Creek between Gilmore Lane and Oro Dam/Olive Highway intersection (approximately 1 block east of the intersection).	Medium	Medium	Low	High	Low	Moderate	

Opportunities	Feasibility: Technical	Feasibility: Funding	Community & Stakeholder Interest	Multi-Benefits	Issue Magnitude	Cost	Notes
Southside:							
Clean up debris/dumping at Lincoln and Myers.	High	Low	High	Medium	Medium	Low-cost	Issue: dumping hazards in economically-disadvantaged community.
Address public safety, dumping and homeless problem in the stump field and RR drainage areas.	Low	Low	High	Medium	High	Prohibitive	Feasibility/cost: requires purchase of land or coordination with private property owners (stump field) and railroad (railroad drainage areas). Issue: public safety in economically-disadvantaged community.
Raze the overgrown, rotting structure on the corner of Fallbrook & Elgin and maintain property.	High	Low	High	Medium	Medium	Moderate	Issue: public hazard/nuisance in economically-disadvantaged community.
Clean up, abate weeds, fence yards, address public safety issues, and create safe routes to school in Southside alleys.	High	Medium	High	High	High	Moderate	Issue: dumping hazards and nuisances and school safety in an economically-disadvantaged community.
Clean up sites and manage dumping at west end of Elgin and Fort Wayne.	High	Medium	High	Medium	Medium	Low-cost	Issue: dumping hazards in economically-disadvantaged community.
Develop community gardens in abandoned parcels in the Southside neighborhood.	Medium	Medium	High	High	Medium	Low-cost	Feasibility: requires partnership with private landowners. Issue: access to healthy food/agricultural education in economically-disadvantaged community.
Clean and green the site with the burned house on B Street.	Medium	Low	High	Medium	Medium	Moderate	Feasibility/cost: requires purchase of land or coordination with private property owner. Issue: public hazard/nuisance in economically-disadvantaged community.
Industrial Sites:							
Clean and green the Koppers Superfund site at Baggett-Marysville Road.	Low	Medium	High	High	High	Prohibitive	Issue: Superfund site with restrictions on redevelopment. Toxics issues at this site may be serious. Any greening efforts would need to be coordinated with technically adequate remediation plans. Site is privately owned.
Clean and green the Pacific Oroville Power, Inc. (POPI) site.	Low	Medium	High	High	High	Prohibitive	Issue: Potential toxic waste contamination. Toxics issues at this site may be serious. Any greening efforts would need to be coordinated with technically adequate remediation plans. Site is privately owned. Address is 3050 South 5th Avenue.
Clean and green the four "teepee burner" sites in the industrial area.	Low	Medium	High	Medium	High	Prohibitive	Issue: Potential toxic waste contamination. Toxics issues at this site may be serious. Any greening efforts would need to be coordinated with technically adequate remediation plans. Sites may be privately owned.
Create a long-range plan investigating the possibilities of remediating toxic sites in the industrial area, providing tax incentives and legal protection for companies willing to invest in cleanup and reuse of the sites, and creating a series of wild parks accessed by a trail tied to the main road.	Low	Low	High	Medium	Low	Prohibitive	Feasibility/cost: may require purchase of land or coordination with private property owners. Funding: combines multiple issues (economic development, toxics remediation, parks), so will be challenging to find finding to address them all together.

appendix b

WORKSHOP SUMMARIES

Oroville Area Urban Greening Plan

SUMMARY

Community Workshop #1

Saturday, June 29, 2013

9:30 am to 2:30 pm

Oroville Veterans Memorial Hall

2374 Montgomery Street, Oroville

Over 40 Oroville and Butte County residents and local agency representatives gathered at the Veterans Memorial Hall to discuss ideas for the Oroville Area Urban Greening Plan. The plan is a partnership between Butte County, the City of Oroville, and the Feather River Recreation and Park District, funded by a grant from the State's Strategic Growth Council. The workshop began with a welcome from Bill Connelly, Butte County Supervisor, and Tim Snellings, Butte County's Director of Development Services. Participants then heard about the background, benefits, and goals of the Plan from Butte County staff and their consultants.

Vans took three groups of workshop participants to different parts of the study area, each led by a local government planner (Claudia Stuart and Chris Thomas from Butte County and Luis Topete from the City of Oroville) and a member of the consulting team (Isabelle Minn, Tanya Sundberg and Joanna Winter from The Planning Center | DC&E). Participants were asked to consider greening opportunities in these areas, as well as potential barriers to greening.

After the tours, the three groups plotted their site-specific ideas on large maps and reported back to the larger group about their findings. The full group then discussed and asked questions about the plan.

The results from the van tours are summarized below.

Southside

The Southside tour visited three sites:

- The intersection at Lincoln Street where Baggett-Marysville Road dead-ends into the railroad right-of-way
- The Baptist Church in the heart of Southside's residential area
- The intersection of Meyers Street and Wyandotte Avenue, a commercial hub in the Southside that is flanked by vacant lots

The tour participants highlighted the need for greener streets that are safer for pedestrians and bicyclists, particularly along school routes; alleys that are safe and well-maintained; stormwater management to reduce flooding; increased connections to the industrial area; and increased native plants and invasive plant management.

Downtown

Participants in the Downtown tour visited and/or viewed the following sites:

- The gap in the Brad Freeman trail behind the Veterans Memorial Hall
- The municipal parking lot
- Centennial Park
- The Chinese Temple
- The intersection of Meyers Street and Montgomery Avenue

The participants reported that the primary greening opportunity in the Downtown is to connect the Downtown with the river, specifically with access to the water, while providing more shade and plantings all over the area, particularly along the riverwalk. The discussion focused on making the river, museums, and Downtown shops accessible to all users, including pedestrians, bicyclists, drivers and disabled residents.

Schools, Parks & Regional Connections

This regional tour included the following stops:

- Oakdale Heights Elementary School
- Las Plumas High School
- Bicycle connection gap between the Brad Freeman trail and Highway 162
- Nelson Park
- Thermalito Forebay Picnic Area/Aquatic Center

Regional tour participants found that all schools are in need of additional shading to various degrees for play areas, walkways on campuses, and pedestrian and bicycle pathways near the schools. The Oakdale Heights Elementary School, Las Plumas High School, and other elementary schools in and around the Southside neighborhood require shaded sidewalks to connect the schools to each other. Where the Brad Freeman trail intersects with Highway 162, a better connection is needed for safe and convenient bicycle travel. At Nelson Park, tour participants discussed the antiquated irrigation, need for more trees, and need for a pedestrian/bicycle connection between the park and the Thermalito Forebay Picnic Area/Aquatic Center.

Oroville Area Urban Greening Plan

SUMMARY

Southside Community Workshop

Saturday, October 26, 2013

1:30 pm to 5 pm

African American Family & Cultural Center

3300 Spencer Street, Oroville

Around fifteen residents and local agency representatives gathered at the African American Family and Cultural Center to discuss issues and opportunities in the Southside neighborhood that should be addressed in the Oroville Area Urban Greening Plan. The Urban Greening Plan is a partnership between Butte County, the City of Oroville, and the Feather River Recreation and Parks District, funded by a grant from the State's Strategic Growth Council. The workshop began with a welcome from the three main agency partners in the project, including Claudia Stuart from Butte County, Don Rust from the City of Oroville, and Ann Willman from the Feather River Recreation and Parks District. Participants then heard about the background, benefits, and goals of the Urban Greening Plan, as well as a summary of known issues and greening opportunities specific to the Southside neighborhood.

Two tours took workshop participants to different parts of the study area, one walking through the neighborhood, and one in a van visiting sites throughout and around the perimeter of the neighborhood. Participants were asked to consider greening opportunities in these areas, as well as potential barriers to greening. During the tours, County staff and consultants took notes on comments made by residents and other participants. Participants also filled out tour worksheets and comment cards.

The discussion points from the tours are summarized below.

Walking Tour

The walking tour visited three official sites:

- Southeast corner of Myers Street and Wyandotte Avenue
- El Medio Fire Station
- Southwest corner of Myers Street and Fort Wayne Street

The tour also informally stopped at alleys and vacant properties that have become hazardous dumping sites. The tour participants highlighted the need for greener streets that are safer for pedestrians, bicyclists, and residents with disabilities; alleys that are safe and well-maintained; vacant sites that are clean and free of trash; reduced flooding through stormwater management; and commercial areas (gas stations, drugstores, etc.) where residents feel safe shopping. Participants also discussed easing the process for local residents to be hired for local improvement jobs.

Van Tour

Participants in the Van tour visited and/or viewed the following sites:

- The east end of Elgin Street, overlooking the railroad right-of-way (ROW)
- Turnout off Bagget-Marysville Road
- Corner of Fallbrook Avenue and Oro-Bangor Highway
- Martin Luther King, Jr. Park

The tour participants highlighted the need to improve public safety throughout the Southside neighborhood, and recommended that security lighting and cameras be considered in all greening projects. On a related note, many participants expressed concern about the alleys throughout the neighborhood being used for illicit purposes, and some recommended closing them off entirely. If kept, the alleys should be made safe by removing trash, maintaining and improving vegetation, and installing lighting and cameras. In general, greening opportunities west of the Southside neighborhood, including potential sites along the railroad ROW, should focus on passive recreation and/or community events facilities rather than ballfields and community gardens because of the distance from the main residential area and concerns about public safety. The group talked about improving the City's detention ponds west of the Southside neighborhood for conservation purposes, as well as using the old Western Pacific Roundhouse site near the intersection of Bagget-Marysville Road and Lincoln Boulevard for equestrian or ATV trails, community events like carnivals, a railroad museum, and/or a skatepark. At the corner of Fallbrook Avenue and Oro-Bangor Highway, the group considered possible routes for students to travel between the Southside neighborhood and Las Plumas High School, and in general supported using the powerline corridor as a preferred route over Oro-Bangor Highway or the Stumpfield area due to safety concerns related to cars along the highway and illicit activity in the Stumpfield area. At Martin Luther King, Jr. Park, the tour participants discussed graffiti and vandalism problems, as well as the park's reputation for being unsafe, and recommended additional public safety measures to improve the park.

Oroville Area Urban Greening Plan

SUMMARY

Community Workshop #2: Priority Greening Opportunities

November 18, 2013, 6:00 pm to 8:00 pm

Oroville Veterans Memorial Hall, 2374 Montgomery Street, Oroville

Around thirty residents and local agency representatives gathered at the Veterans Memorial Hall on a Monday evening to review the work to date on the Oroville Area Urban Greening Plan, prioritize greening project opportunities, and discuss design ideas for greening projects. The Urban Greening Plan is a partnership between Butte County, the City of Oroville, and the Feather River Recreation and Parks District, funded by a grant from the State's Strategic Growth Council.

The workshop began with a welcome from Claudia Stuart, Project Manager for Butte County, and from Don Rust of the City of Oroville, who invited residents to also involve themselves in the City's General Plan and Zoning Code updates, which are currently underway. Isabelle Minn and Tanya Sundberg, consultants to the project from The Planning Center | DC&E, then described the purpose of the Urban Greening Plan; its process so far, which has involved multiple stakeholder interviews and community workshops; and the preliminary opportunities for greening that have been identified through the planning process.

Attendees then chose one of five topics (shown below) for a small group discussion:

- Recreational trail, pedestrian, and bicycle systems
- Planting connections and sites (e.g. landscaping and street trees)
- Parks and open space (including community gardens)
- Stormwater management
- Clean and green Southside and industrial area

For each topic, a matrix was provided that described and evaluated each relevant greening opportunity based on factors such as feasibility, funding availability, community interest, and cost. In addition, greening opportunities relevant to the topic were shown on a map, which also highlighted preliminary priority greening opportunities, and images of design concepts for greening projects were provided in a booklet. County and The Planning Center | DC&E staff members each facilitated a small group discussion that was focused on two main points: 1) Whether the participants agreed with or wanted to change the preliminary priority greening opportunities; and 2) Which design solutions were appropriate for which opportunities. Participants were encouraged to write or draw on the maps and design concepts booklets.

After the first discussion, participants chose a different topic, and repeated the process with the new topic. At the end, the facilitators shared the points raised in the two sessions with the entire group. After the workshop, the County will consider the suggestions for new greening opportunities, changes to the prioritized greening opportunity list, and input on design concepts for integration into the Draft Urban Greening Plan.

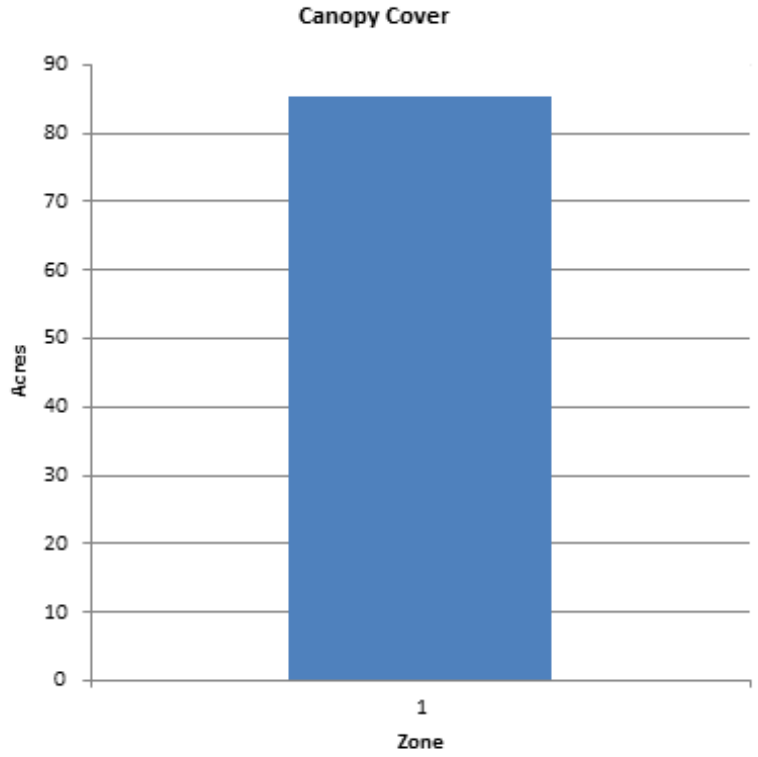
appendix C

ITREES ANALYSIS

Oroville

Canopy Cover of All Trees (Acres)

6/8/2015



Zone	Acres	% of Total Canopy Cover
1	85	100.0
Citywide total	85	100.0

	Total Land Area	Total Street and Sidewalk Area	Total Canopy Cover	Canopy Cover as % of Total Land Area	Canopy Cover as % of Total Streets and Sidewalks
Citywide Total	8,320	0	85	1.02	0.00

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Ailanthus	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	50.00	0.04
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Alder	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	Declining/Dead	4	(N/A)	4.60	0.08
	Fair	31	(N/A)	35.63	0.60
	Good	1	(N/A)	1.15	0.02
	Poor	51	(N/A)	58.62	0.99
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	111	(N/A)	99.11	2.16
	Good	1	(N/A)	0.89	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	112	(N/A)	100.00	2.18
Ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Bald cypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	75.00	0.06
	Good	1	(N/A)	25.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	10	(N/A)	43.48	0.19
	Good	11	(N/A)	47.83	0.21
	Poor	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Birch	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	2	(N/A)	100.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	Declining/Dead	1	(N/A)	5.26	0.02
	Fair	8	(N/A)	42.11	0.16
	Good	0	(N/A)	0.00	0.00
	Poor	10	(N/A)	52.63	0.19
	Total	19	(N/A)	100.00	0.37

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Callery pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	20.00	0.06
	Good	9	(N/A)	60.00	0.17
	Poor	3	(N/A)	20.00	0.06
	Total	15	(N/A)	100.00	0.29
Camphor tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	55	(N/A)	66.27	1.07
	Good	21	(N/A)	25.30	0.41
	Poor	7	(N/A)	8.43	0.14
	Total	83	(N/A)	100.00	1.61
Caucasian ash	Declining/Dead	1	(N/A)	0.50	0.02
	Fair	125	(N/A)	62.19	2.43
	Good	49	(N/A)	24.38	0.95
	Poor	25	(N/A)	12.44	0.49
	Total	200	(N/A)	99.50	3.89
Cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	3.57	0.02
	Good	27	(N/A)	96.43	0.52
	Poor	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	40.00	0.08
	Good	6	(N/A)	60.00	0.12
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Chinese elm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	49	(N/A)	75.38	0.95
	Good	5	(N/A)	7.69	0.10
	Poor	11	(N/A)	16.92	0.21
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	17.65	0.06
	Good	14	(N/A)	82.35	0.27
	Poor	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33
Chinese hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	160	(N/A)	71.75	3.11
	Good	55	(N/A)	24.66	1.07
	Poor	7	(N/A)	3.14	0.14
	Total	222	(N/A)	99.55	4.31
Chinese pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	336	(N/A)	45.78	6.53
	Good	391	(N/A)	53.27	7.60
	Poor	6	(N/A)	0.82	0.12
	Total	733	(N/A)	99.86	14.24
Common fig	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	100.00	0.06
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Date palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Deodar cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	32	(N/A)	43.24	0.62
	Good	42	(N/A)	56.76	0.82
	Poor	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	40	(N/A)	74.07	0.78
	Good	13	(N/A)	24.07	0.25
	Poor	1	(N/A)	1.85	0.02
	Total	54	(N/A)	100.00	1.05
Diospyros	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	11	(N/A)	68.75	0.21
	Good	5	(N/A)	31.25	0.10
	Poor	0	(N/A)	0.00	0.00
	Total	16	(N/A)	100.00	0.31
Elm	Declining/Dead	1	(N/A)	3.85	0.02
	Fair	17	(N/A)	65.38	0.33
	Good	5	(N/A)	19.23	0.10
	Poor	3	(N/A)	11.54	0.06
	Total	26	(N/A)	100.00	0.51
Fan palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	17	(N/A)	28.33	0.33
	Good	41	(N/A)	68.33	0.80
	Poor	2	(N/A)	3.33	0.04
	Total	60	(N/A)	100.00	1.17
Gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	21	(N/A)	58.33	0.41
	Good	14	(N/A)	38.89	0.27
	Poor	1	(N/A)	2.78	0.02
	Total	36	(N/A)	100.00	0.70
Hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Hickory	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	29	(N/A)	80.56	0.56
	Good	5	(N/A)	13.89	0.10
	Poor	2	(N/A)	5.56	0.04
	Total	36	(N/A)	100.00	0.70
Honeylocust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	4	(N/A)	100.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Japanese maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	3	(N/A)	100.00	0.06
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	Declining/Dead	3	(N/A)	1.55	0.06
	Fair	128	(N/A)	66.32	2.49
	Good	58	(N/A)	30.05	1.13
	Poor	4	(N/A)	2.07	0.08
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	Declining/Dead	2	(N/A)	0.34	0.04
	Fair	229	(N/A)	38.75	4.45
	Good	337	(N/A)	57.02	6.55
	Poor	23	(N/A)	3.89	0.45
	Total	591	(N/A)	100.00	11.48
Laurel de olor	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	55.56	0.10
	Good	4	(N/A)	44.44	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	Declining/Dead	1	(N/A)	25.00	0.02
	Fair	1	(N/A)	25.00	0.02
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	35	(N/A)	79.55	0.68
	Good	1	(N/A)	2.27	0.02
	Poor	8	(N/A)	18.18	0.16
	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	72.00	0.35
	Good	2	(N/A)	8.00	0.04
	Poor	4	(N/A)	16.00	0.08
	Total	24	(N/A)	96.00	0.47

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Magnolia	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	9	(N/A)	81.82	0.17
	Good	2	(N/A)	18.18	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	11	(N/A)	100.00	0.21
Mandarin lime	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	Declining/Dead	13	(N/A)	1.87	0.25
	Fair	223	(N/A)	32.04	4.33
	Good	433	(N/A)	62.21	8.41
	Poor	27	(N/A)	3.88	0.52
	Total	696	(N/A)	100.00	13.52
Milktree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	22	(N/A)	75.86	0.43
	Good	6	(N/A)	20.69	0.12
	Poor	1	(N/A)	3.45	0.02
	Total	29	(N/A)	100.00	0.56
Mulberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	13	(N/A)	72.22	0.25
	Good	4	(N/A)	22.22	0.08
	Poor	1	(N/A)	5.56	0.02
	Total	18	(N/A)	100.00	0.35
Northern red oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	114	(N/A)	41.45	2.21
	Good	153	(N/A)	55.64	2.97
	Poor	8	(N/A)	2.91	0.16
	Total	275	(N/A)	100.00	5.34
Northern white cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	0	(N/A)	0.00	0.00
	Poor	1	(N/A)	100.00	0.02
	Total	1	(N/A)	100.00	0.02
Oak	Declining/Dead	1	(N/A)	0.75	0.02
	Fair	78	(N/A)	58.21	1.52
	Good	52	(N/A)	38.81	1.01
	Poor	3	(N/A)	2.24	0.06
	Total	134	(N/A)	100.00	2.60
Olive	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	34	(N/A)	91.89	0.66
	Good	0	(N/A)	0.00	0.00
	Poor	3	(N/A)	8.11	0.06
	Total	37	(N/A)	100.00	0.72
Orange	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	45	(N/A)	37.19	0.87
	Good	72	(N/A)	59.50	1.40
	Poor	4	(N/A)	3.31	0.08
	Total	121	(N/A)	100.00	2.35
Pin oak	Declining/Dead	3	(N/A)	13.04	0.06
	Fair	7	(N/A)	30.43	0.14
	Good	13	(N/A)	56.52	0.25
	Poor	0	(N/A)	0.00	0.00
	Total	23	(N/A)	100.00	0.45
Pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	28	(N/A)	75.68	0.54
	Good	8	(N/A)	21.62	0.16
	Poor	1	(N/A)	2.70	0.02
	Total	37	(N/A)	100.00	0.72
Pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	54.55	0.35
	Good	14	(N/A)	42.42	0.27
	Poor	1	(N/A)	3.03	0.02
	Total	33	(N/A)	100.00	0.64
Red maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	7	(N/A)	18.42	0.14
	Good	27	(N/A)	71.05	0.52
	Poor	4	(N/A)	10.53	0.08
	Total	38	(N/A)	100.00	0.74
Redbud	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	25.00	0.16
	Good	23	(N/A)	71.88	0.45
	Poor	1	(N/A)	3.13	0.02
	Total	32	(N/A)	100.00	0.62
Redwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	12	(N/A)	44.44	0.23
	Good	15	(N/A)	55.56	0.29
	Poor	0	(N/A)	0.00	0.00
	Total	27	(N/A)	100.00	0.52
Roble negro	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	50.00	0.08
	Good	4	(N/A)	50.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Silver maple	Declining/Dead	1	(N/A)	5.00	0.02
	Fair	11	(N/A)	55.00	0.21
	Good	3	(N/A)	15.00	0.06
	Poor	5	(N/A)	25.00	0.10
	Total	20	(N/A)	100.00	0.39
Sweet gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	15	(N/A)	25.86	0.29
	Good	40	(N/A)	68.97	0.78
	Poor	3	(N/A)	5.17	0.06
	Total	58	(N/A)	100.00	1.13

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Sweetgum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	14	(N/A)	25.45	0.27
	Good	41	(N/A)	74.55	0.80
	Poor	0	(N/A)	0.00	0.00
	Total	55	(N/A)	100.00	1.07
Sycamore	Declining/Dead	3	(N/A)	0.71	0.06
	Fair	247	(N/A)	58.53	4.80
	Good	154	(N/A)	36.49	2.99
	Poor	18	(N/A)	4.27	0.35
	Total	422	(N/A)	100.00	8.20
Tulip tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	5.62	0.10
	Good	84	(N/A)	94.38	1.63
	Poor	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	Declining/Dead	9	(N/A)	16.67	0.17
	Fair	23	(N/A)	42.59	0.45
	Good	0	(N/A)	0.00	0.00
	Poor	22	(N/A)	40.74	0.43
	Total	54	(N/A)	100.00	1.05
Walnut	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	6.25	0.08
	Good	60	(N/A)	93.75	1.17
	Poor	0	(N/A)	0.00	0.00
	Total	64	(N/A)	100.00	1.24
Willow	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	33.33	0.02
	Good	2	(N/A)	66.67	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Ailanthus	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	50.00	0.04
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Alder	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	Declining/Dead	4	(N/A)	4.60	0.08
	Fair	31	(N/A)	35.63	0.60
	Good	1	(N/A)	1.15	0.02
	Poor	51	(N/A)	58.62	0.99
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	111	(N/A)	99.11	2.16
	Good	1	(N/A)	0.89	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	112	(N/A)	100.00	2.18
Ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Bald cypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	75.00	0.06
	Good	1	(N/A)	25.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	10	(N/A)	43.48	0.19
	Good	11	(N/A)	47.83	0.21
	Poor	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Birch	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	2	(N/A)	100.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	Declining/Dead	1	(N/A)	5.26	0.02
	Fair	8	(N/A)	42.11	0.16
	Good	0	(N/A)	0.00	0.00
	Poor	10	(N/A)	52.63	0.19
	Total	19	(N/A)	100.00	0.37

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Callery pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	20.00	0.06
	Good	9	(N/A)	60.00	0.17
	Poor	3	(N/A)	20.00	0.06
	Total	15	(N/A)	100.00	0.29
Camphor tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	55	(N/A)	66.27	1.07
	Good	21	(N/A)	25.30	0.41
	Poor	7	(N/A)	8.43	0.14
	Total	83	(N/A)	100.00	1.61
Caucasian ash	Declining/Dead	1	(N/A)	0.50	0.02
	Fair	125	(N/A)	62.19	2.43
	Good	49	(N/A)	24.38	0.95
	Poor	25	(N/A)	12.44	0.49
	Total	200	(N/A)	99.50	3.89
Cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	3.57	0.02
	Good	27	(N/A)	96.43	0.52
	Poor	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	40.00	0.08
	Good	6	(N/A)	60.00	0.12
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Chinese elm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	49	(N/A)	75.38	0.95
	Good	5	(N/A)	7.69	0.10
	Poor	11	(N/A)	16.92	0.21
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	17.65	0.06
	Good	14	(N/A)	82.35	0.27
	Poor	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33
Chinese hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	160	(N/A)	71.75	3.11
	Good	55	(N/A)	24.66	1.07
	Poor	7	(N/A)	3.14	0.14
	Total	222	(N/A)	99.55	4.31
Chinese pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	336	(N/A)	45.78	6.53
	Good	391	(N/A)	53.27	7.60
	Poor	6	(N/A)	0.82	0.12
	Total	733	(N/A)	99.86	14.24
Common fig	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	100.00	0.06
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Date palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Deodar cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	32	(N/A)	43.24	0.62
	Good	42	(N/A)	56.76	0.82
	Poor	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	40	(N/A)	74.07	0.78
	Good	13	(N/A)	24.07	0.25
	Poor	1	(N/A)	1.85	0.02
	Total	54	(N/A)	100.00	1.05
Diospyros	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	11	(N/A)	68.75	0.21
	Good	5	(N/A)	31.25	0.10
	Poor	0	(N/A)	0.00	0.00
	Total	16	(N/A)	100.00	0.31
Elm	Declining/Dead	1	(N/A)	3.85	0.02
	Fair	17	(N/A)	65.38	0.33
	Good	5	(N/A)	19.23	0.10
	Poor	3	(N/A)	11.54	0.06
	Total	26	(N/A)	100.00	0.51
Fan palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	17	(N/A)	28.33	0.33
	Good	41	(N/A)	68.33	0.80
	Poor	2	(N/A)	3.33	0.04
	Total	60	(N/A)	100.00	1.17
Gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	21	(N/A)	58.33	0.41
	Good	14	(N/A)	38.89	0.27
	Poor	1	(N/A)	2.78	0.02
	Total	36	(N/A)	100.00	0.70
Hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Hickory	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	29	(N/A)	80.56	0.56
	Good	5	(N/A)	13.89	0.10
	Poor	2	(N/A)	5.56	0.04
	Total	36	(N/A)	100.00	0.70
Honeylocust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	4	(N/A)	100.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Japanese maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	3	(N/A)	100.00	0.06
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	Declining/Dead	3	(N/A)	1.55	0.06
	Fair	128	(N/A)	66.32	2.49
	Good	58	(N/A)	30.05	1.13
	Poor	4	(N/A)	2.07	0.08
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	Declining/Dead	2	(N/A)	0.34	0.04
	Fair	229	(N/A)	38.75	4.45
	Good	337	(N/A)	57.02	6.55
	Poor	23	(N/A)	3.89	0.45
	Total	591	(N/A)	100.00	11.48
Laurel de olor	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	55.56	0.10
	Good	4	(N/A)	44.44	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	Declining/Dead	1	(N/A)	25.00	0.02
	Fair	1	(N/A)	25.00	0.02
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	35	(N/A)	79.55	0.68
	Good	1	(N/A)	2.27	0.02
	Poor	8	(N/A)	18.18	0.16
	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	72.00	0.35
	Good	2	(N/A)	8.00	0.04
	Poor	4	(N/A)	16.00	0.08
	Total	24	(N/A)	96.00	0.47

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Magnolia	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	9	(N/A)	81.82	0.17
	Good	2	(N/A)	18.18	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	11	(N/A)	100.00	0.21
Mandarin lime	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	Declining/Dead	13	(N/A)	1.87	0.25
	Fair	223	(N/A)	32.04	4.33
	Good	433	(N/A)	62.21	8.41
	Poor	27	(N/A)	3.88	0.52
	Total	696	(N/A)	100.00	13.52
Milktree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	22	(N/A)	75.86	0.43
	Good	6	(N/A)	20.69	0.12
	Poor	1	(N/A)	3.45	0.02
	Total	29	(N/A)	100.00	0.56
Mulberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	13	(N/A)	72.22	0.25
	Good	4	(N/A)	22.22	0.08
	Poor	1	(N/A)	5.56	0.02
	Total	18	(N/A)	100.00	0.35
Northern red oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	114	(N/A)	41.45	2.21
	Good	153	(N/A)	55.64	2.97
	Poor	8	(N/A)	2.91	0.16
	Total	275	(N/A)	100.00	5.34
Northern white cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	0	(N/A)	0.00	0.00
	Poor	1	(N/A)	100.00	0.02
	Total	1	(N/A)	100.00	0.02
Oak	Declining/Dead	1	(N/A)	0.75	0.02
	Fair	78	(N/A)	58.21	1.52
	Good	52	(N/A)	38.81	1.01
	Poor	3	(N/A)	2.24	0.06
	Total	134	(N/A)	100.00	2.60
Olive	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	34	(N/A)	91.89	0.66
	Good	0	(N/A)	0.00	0.00
	Poor	3	(N/A)	8.11	0.06
	Total	37	(N/A)	100.00	0.72
Orange	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	45	(N/A)	37.19	0.87
	Good	72	(N/A)	59.50	1.40
	Poor	4	(N/A)	3.31	0.08
	Total	121	(N/A)	100.00	2.35
Pin oak	Declining/Dead	3	(N/A)	13.04	0.06
	Fair	7	(N/A)	30.43	0.14
	Good	13	(N/A)	56.52	0.25
	Poor	0	(N/A)	0.00	0.00
	Total	23	(N/A)	100.00	0.45
Pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	28	(N/A)	75.68	0.54
	Good	8	(N/A)	21.62	0.16
	Poor	1	(N/A)	2.70	0.02
	Total	37	(N/A)	100.00	0.72
Pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	54.55	0.35
	Good	14	(N/A)	42.42	0.27
	Poor	1	(N/A)	3.03	0.02
	Total	33	(N/A)	100.00	0.64
Red maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	7	(N/A)	18.42	0.14
	Good	27	(N/A)	71.05	0.52
	Poor	4	(N/A)	10.53	0.08
	Total	38	(N/A)	100.00	0.74
Redbud	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	25.00	0.16
	Good	23	(N/A)	71.88	0.45
	Poor	1	(N/A)	3.13	0.02
	Total	32	(N/A)	100.00	0.62
Redwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	12	(N/A)	44.44	0.23
	Good	15	(N/A)	55.56	0.29
	Poor	0	(N/A)	0.00	0.00
	Total	27	(N/A)	100.00	0.52
Roble negro	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	50.00	0.08
	Good	4	(N/A)	50.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Silver maple	Declining/Dead	1	(N/A)	5.00	0.02
	Fair	11	(N/A)	55.00	0.21
	Good	3	(N/A)	15.00	0.06
	Poor	5	(N/A)	25.00	0.10
	Total	20	(N/A)	100.00	0.39
Sweet gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	15	(N/A)	25.86	0.29
	Good	40	(N/A)	68.97	0.78
	Poor	3	(N/A)	5.17	0.06
	Total	58	(N/A)	100.00	1.13

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Sweetgum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	14	(N/A)	25.45	0.27
	Good	41	(N/A)	74.55	0.80
	Poor	0	(N/A)	0.00	0.00
	Total	55	(N/A)	100.00	1.07
Sycamore	Declining/Dead	3	(N/A)	0.71	0.06
	Fair	247	(N/A)	58.53	4.80
	Good	154	(N/A)	36.49	2.99
	Poor	18	(N/A)	4.27	0.35
	Total	422	(N/A)	100.00	8.20
Tulip tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	5.62	0.10
	Good	84	(N/A)	94.38	1.63
	Poor	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	Declining/Dead	9	(N/A)	16.67	0.17
	Fair	23	(N/A)	42.59	0.45
	Good	0	(N/A)	0.00	0.00
	Poor	22	(N/A)	40.74	0.43
	Total	54	(N/A)	100.00	1.05
Walnut	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	6.25	0.08
	Good	60	(N/A)	93.75	1.17
	Poor	0	(N/A)	0.00	0.00
	Total	64	(N/A)	100.00	1.24
Willow	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	33.33	0.02
	Good	2	(N/A)	66.67	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Ailanthus	no	3	(N/A)	75.00	0.06
	yes	1	(N/A)	25.00	0.02
	Total	4	(N/A)	100.00	0.08
Alder	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	no	73	(N/A)	83.91	1.42
	yes	14	(N/A)	16.09	0.27
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	no	112	(N/A)	100.00	2.18
	yes	0	(N/A)	0.00	0.00
	Total	112	(N/A)	100.00	2.18
Ash	no	6	(N/A)	75.00	0.12
	yes	2	(N/A)	25.00	0.04
	Total	8	(N/A)	100.00	0.16
Bald cypress	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	no	21	(N/A)	91.30	0.41
	yes	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Birch	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	no	18	(N/A)	94.74	0.35
	yes	1	(N/A)	5.26	0.02
	Total	19	(N/A)	100.00	0.37
Callery pear	no	15	(N/A)	100.00	0.29
	yes	0	(N/A)	0.00	0.00
	Total	15	(N/A)	100.00	0.29
Camphor tree	no	60	(N/A)	72.29	1.17
	yes	23	(N/A)	27.71	0.45
	Total	83	(N/A)	100.00	1.61
Caucasian ash	no	156	(N/A)	77.61	3.03
	yes	45	(N/A)	22.39	0.87
	Total	201	(N/A)	100.00	3.91
Cedar	no	28	(N/A)	100.00	0.54
	yes	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Chinese elm	no	31	(N/A)	47.69	0.60
	yes	34	(N/A)	52.31	0.66
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	no	17	(N/A)	100.00	0.33
	yes	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Chinese hackberry	no	164	(N/A)	73.54	3.19
	yes	59	(N/A)	26.46	1.15
	Total	223	(N/A)	100.00	4.33
Chinese pistache	no	583	(N/A)	79.43	11.33
	yes	151	(N/A)	20.57	2.93
	Total	734	(N/A)	100.00	14.26
Common fig	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Date palm	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Deodar cedar	no	74	(N/A)	100.00	1.44
	yes	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	no	54	(N/A)	100.00	1.05
	yes	0	(N/A)	0.00	0.00
	Total	54	(N/A)	100.00	1.05
Diospyros	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	no	15	(N/A)	93.75	0.29
	yes	1	(N/A)	6.25	0.02
	Total	16	(N/A)	100.00	0.31
Elm	no	25	(N/A)	96.15	0.49
	yes	1	(N/A)	3.85	0.02
	Total	26	(N/A)	100.00	0.51
Fan palm	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	no	56	(N/A)	93.33	1.09
	yes	4	(N/A)	6.67	0.08
	Total	60	(N/A)	100.00	1.17
Gum	no	34	(N/A)	94.44	0.66
	yes	2	(N/A)	5.56	0.04
	Total	36	(N/A)	100.00	0.70
Hackberry	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Hickory	no	26	(N/A)	72.22	0.51
	yes	10	(N/A)	27.78	0.19
	Total	36	(N/A)	100.00	0.70
Honeylocust	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Japanese maple	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	no	139	(N/A)	72.02	2.70
	yes	54	(N/A)	27.98	1.05
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	no	563	(N/A)	95.26	10.94
	yes	28	(N/A)	4.74	0.54
	Total	591	(N/A)	100.00	11.48
Laurel de olor	no	7	(N/A)	77.78	0.14
	yes	2	(N/A)	22.22	0.04
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	no	38	(N/A)	86.36	0.74
	yes	6	(N/A)	13.64	0.12
	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	no	22	(N/A)	88.00	0.43
	yes	2	(N/A)	8.00	0.04
	Total	24	(N/A)	96.00	0.47
Magnolia	no	9	(N/A)	81.82	0.17
	yes	2	(N/A)	18.18	0.04
	Total	11	(N/A)	100.00	0.21
Mandarin lime	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	no	687	(N/A)	98.71	13.35
	yes	9	(N/A)	1.29	0.17
	Total	696	(N/A)	100.00	13.52
Milktree	no	23	(N/A)	79.31	0.45
	yes	6	(N/A)	20.69	0.12
	Total	29	(N/A)	100.00	0.56
Mulberry	no	8	(N/A)	100.00	0.16
	yes	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	no	9	(N/A)	50.00	0.17
	yes	9	(N/A)	50.00	0.17
	Total	18	(N/A)	100.00	0.35
Northern red oak	no	227	(N/A)	82.55	4.41
	yes	47	(N/A)	17.09	0.91
	Total	274	(N/A)	99.64	5.32
Northern white cedar	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Oak	no	130	(N/A)	97.01	2.53
	yes	4	(N/A)	2.99	0.08
	Total	134	(N/A)	100.00	2.60
Olive	no	37	(N/A)	100.00	0.72
	yes	0	(N/A)	0.00	0.00
	Total	37	(N/A)	100.00	0.72

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Orange	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Pear	no	120	(N/A)	99.17	2.33
	yes	1	(N/A)	0.83	0.02
	Total	121	(N/A)	100.00	2.35
Pin oak	no	23	(N/A)	100.00	0.45
	yes	0	(N/A)	0.00	0.00
	Total	23	(N/A)	100.00	0.45
Pine	no	37	(N/A)	100.00	0.72
	yes	0	(N/A)	0.00	0.00
	Total	37	(N/A)	100.00	0.72
Pistache	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	no	31	(N/A)	93.94	0.60
	yes	2	(N/A)	6.06	0.04
	Total	33	(N/A)	100.00	0.64
Red maple	no	33	(N/A)	86.84	0.64
	yes	4	(N/A)	10.53	0.08
	Total	37	(N/A)	97.37	0.72
Redbud	no	32	(N/A)	100.00	0.62
	yes	0	(N/A)	0.00	0.00
	Total	32	(N/A)	100.00	0.62
Redwood	no	21	(N/A)	77.78	0.41
	yes	6	(N/A)	22.22	0.12
	Total	27	(N/A)	100.00	0.52
Roble negro	no	8	(N/A)	100.00	0.16
	yes	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Silver maple	no	14	(N/A)	70.00	0.27
	yes	6	(N/A)	30.00	0.12
	Total	20	(N/A)	100.00	0.39
Sweet gum	no	49	(N/A)	84.48	0.95
	yes	9	(N/A)	15.52	0.17
	Total	58	(N/A)	100.00	1.13
Sweetgum	no	50	(N/A)	90.91	0.97
	yes	5	(N/A)	9.09	0.10
	Total	55	(N/A)	100.00	1.07
Sycamore	no	359	(N/A)	85.07	6.97
	yes	63	(N/A)	14.93	1.22
	Total	422	(N/A)	100.00	8.20
Tulip tree	no	89	(N/A)	100.00	1.73
	yes	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	no	48	(N/A)	88.89	0.93
	yes	6	(N/A)	11.11	0.12
	Total	54	(N/A)	100.00	1.05
Walnut	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	no	64	(N/A)	100.00	1.24
	yes	0	(N/A)	0.00	0.00
	Total	64	(N/A)	100.00	1.24

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Willow	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Ailanthus	no	2	(N/A)	50.00	0.04
	yes	2	(N/A)	50.00	0.04
	Total	4	(N/A)	100.00	0.08
Alder	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	no	79	(N/A)	90.80	1.53
	yes	8	(N/A)	9.20	0.16
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	no	108	(N/A)	96.43	2.10
	yes	4	(N/A)	3.57	0.08
	Total	112	(N/A)	100.00	2.18
Ash	no	7	(N/A)	87.50	0.14
	yes	1	(N/A)	12.50	0.02
	Total	8	(N/A)	100.00	0.16
Bald cypress	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	no	18	(N/A)	78.26	0.35
	yes	5	(N/A)	21.74	0.10
	Total	23	(N/A)	100.00	0.45
Birch	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	no	15	(N/A)	78.95	0.29
	yes	4	(N/A)	21.05	0.08
	Total	19	(N/A)	100.00	0.37
Callery pear	no	15	(N/A)	100.00	0.29
	yes	0	(N/A)	0.00	0.00
	Total	15	(N/A)	100.00	0.29
Camphor tree	no	67	(N/A)	80.72	1.30
	yes	16	(N/A)	19.28	0.31
	Total	83	(N/A)	100.00	1.61
Caucasian ash	no	175	(N/A)	87.06	3.40
	yes	25	(N/A)	12.44	0.49
	Total	200	(N/A)	99.50	3.89
Cedar	no	28	(N/A)	100.00	0.54
	yes	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	no	4	(N/A)	40.00	0.08
	yes	6	(N/A)	60.00	0.12
	Total	10	(N/A)	100.00	0.19
Chinese elm	no	31	(N/A)	47.69	0.60
	yes	34	(N/A)	52.31	0.66
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	no	17	(N/A)	100.00	0.33
	yes	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Chinese hackberry	no	201	(N/A)	90.13	3.91
	yes	21	(N/A)	9.42	0.41
	Total	222	(N/A)	99.55	4.31
Chinese pistache	no	580	(N/A)	79.02	11.27
	yes	153	(N/A)	20.84	2.97
	Total	733	(N/A)	99.86	14.24
Common fig	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Date palm	no	3	(N/A)	75.00	0.06
	yes	1	(N/A)	25.00	0.02
	Total	4	(N/A)	100.00	0.08
Deodar cedar	no	74	(N/A)	100.00	1.44
	yes	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	no	48	(N/A)	88.89	0.93
	yes	6	(N/A)	11.11	0.12
	Total	54	(N/A)	100.00	1.05
Diospyros	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	no	15	(N/A)	93.75	0.29
	yes	1	(N/A)	6.25	0.02
	Total	16	(N/A)	100.00	0.31
Elm	no	26	(N/A)	100.00	0.51
	yes	0	(N/A)	0.00	0.00
	Total	26	(N/A)	100.00	0.51
Fan palm	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	no	58	(N/A)	96.67	1.13
	yes	2	(N/A)	3.33	0.04
	Total	60	(N/A)	100.00	1.17
Gum	no	35	(N/A)	97.22	0.68
	yes	1	(N/A)	2.78	0.02
	Total	36	(N/A)	100.00	0.70
Hackberry	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Hickory	no	36	(N/A)	100.00	0.70
	yes	0	(N/A)	0.00	0.00
	Total	36	(N/A)	100.00	0.70
Honeylocust	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Japanese maple	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	no	116	(N/A)	60.10	2.25
	yes	77	(N/A)	39.90	1.50
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	no	430	(N/A)	72.76	8.35
	yes	160	(N/A)	27.07	3.11
	Total	590	(N/A)	99.83	11.46
Laurel de olor	no	9	(N/A)	100.00	0.17
	yes	0	(N/A)	0.00	0.00
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	no	32	(N/A)	72.73	0.62
	yes	12	(N/A)	27.27	0.23
	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	no	24	(N/A)	96.00	0.47
	yes	0	(N/A)	0.00	0.00
	Total	24	(N/A)	96.00	0.47
Magnolia	no	8	(N/A)	72.73	0.16
	yes	3	(N/A)	27.27	0.06
	Total	11	(N/A)	100.00	0.21
Mandarin lime	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	no	611	(N/A)	87.79	11.87
	yes	85	(N/A)	12.21	1.65
	Total	696	(N/A)	100.00	13.52
Milktree	no	24	(N/A)	82.76	0.47
	yes	5	(N/A)	17.24	0.10
	Total	29	(N/A)	100.00	0.56
Mulberry	no	8	(N/A)	100.00	0.16
	yes	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	no	17	(N/A)	94.44	0.33
	yes	0	(N/A)	0.00	0.00
	Total	17	(N/A)	94.44	0.33
Northern red oak	no	220	(N/A)	80.00	4.27
	yes	55	(N/A)	20.00	1.07
	Total	275	(N/A)	100.00	5.34
Northern white cedar	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Oak	no	130	(N/A)	97.01	2.53
	yes	4	(N/A)	2.99	0.08
	Total	134	(N/A)	100.00	2.60
Olive	no	6	(N/A)	16.22	0.12
	yes	31	(N/A)	83.78	0.60
	Total	37	(N/A)	100.00	0.72

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Orange	no	8	(N/A)	80.00	0.16
	yes	2	(N/A)	20.00	0.04
	Total	10	(N/A)	100.00	0.19
Pear	no	75	(N/A)	61.98	1.46
	yes	46	(N/A)	38.02	0.89
	Total	121	(N/A)	100.00	2.35
Pin oak	no	21	(N/A)	91.30	0.41
	yes	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Pine	no	36	(N/A)	97.30	0.70
	yes	1	(N/A)	2.70	0.02
	Total	37	(N/A)	100.00	0.72
Pistache	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	no	26	(N/A)	78.79	0.51
	yes	7	(N/A)	21.21	0.14
	Total	33	(N/A)	100.00	0.64
Red maple	no	38	(N/A)	100.00	0.74
	yes	0	(N/A)	0.00	0.00
	Total	38	(N/A)	100.00	0.74
Redbud	no	12	(N/A)	37.50	0.23
	yes	20	(N/A)	62.50	0.39
	Total	32	(N/A)	100.00	0.62
Redwood	no	22	(N/A)	81.48	0.43
	yes	5	(N/A)	18.52	0.10
	Total	27	(N/A)	100.00	0.52
Roble negro	no	5	(N/A)	62.50	0.10
	yes	3	(N/A)	37.50	0.06
	Total	8	(N/A)	100.00	0.16
Silver maple	no	17	(N/A)	85.00	0.33
	yes	3	(N/A)	15.00	0.06
	Total	20	(N/A)	100.00	0.39
Sweet gum	no	58	(N/A)	100.00	1.13
	yes	0	(N/A)	0.00	0.00
	Total	58	(N/A)	100.00	1.13
Sweetgum	no	47	(N/A)	85.45	0.91
	yes	8	(N/A)	14.55	0.16
	Total	55	(N/A)	100.00	1.07
Sycamore	no	346	(N/A)	81.99	6.72
	yes	76	(N/A)	18.01	1.48
	Total	422	(N/A)	100.00	8.20
Tulip tree	no	89	(N/A)	100.00	1.73
	yes	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	no	30	(N/A)	55.56	0.58
	yes	24	(N/A)	44.44	0.47
	Total	54	(N/A)	100.00	1.05
Walnut	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	no	44	(N/A)	68.75	0.85
	yes	20	(N/A)	31.25	0.39
	Total	64	(N/A)	100.00	1.24

Overhead Utility Lines Conflicts by Species for All Trees

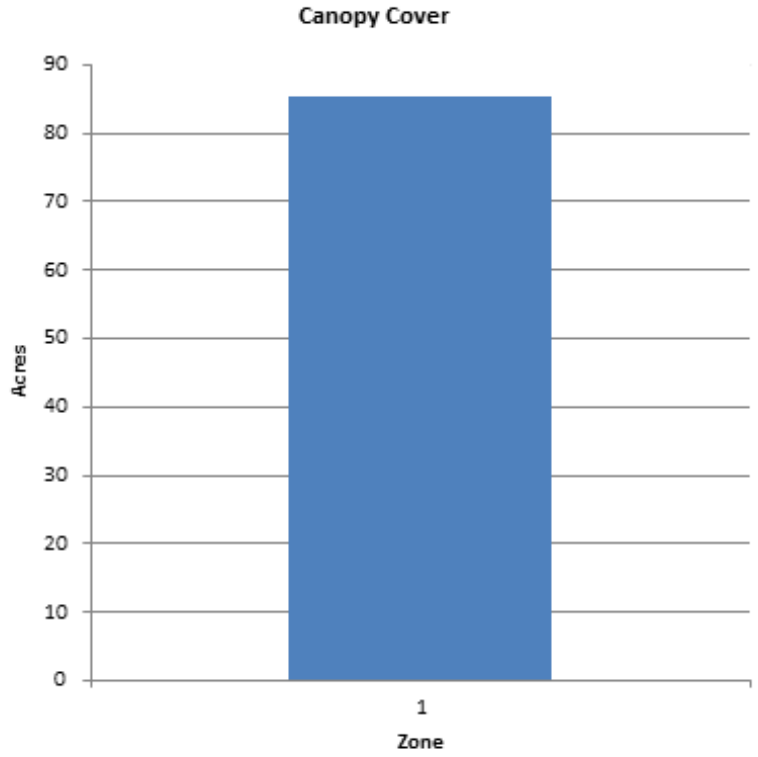
6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Willow	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Oroville

Canopy Cover of All Trees (Acres)

6/8/2015



Zone	Acres	% of Total Canopy Cover
1	85	100.0
Citywide total	85	100.0

	Total Land Area	Total Street and Sidewalk Area	Total Canopy Cover	Canopy Cover as % of Total Land Area	Canopy Cover as % of Total Streets and Sidewalks
Citywide Total	8,320	0	85	1.02	0.00

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Ailanthus	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	50.00	0.04
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Alder	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	Declining/Dead	4	(N/A)	4.60	0.08
	Fair	31	(N/A)	35.63	0.60
	Good	1	(N/A)	1.15	0.02
	Poor	51	(N/A)	58.62	0.99
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	111	(N/A)	99.11	2.16
	Good	1	(N/A)	0.89	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	112	(N/A)	100.00	2.18
Ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Bald cypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	75.00	0.06
	Good	1	(N/A)	25.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	10	(N/A)	43.48	0.19
	Good	11	(N/A)	47.83	0.21
	Poor	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Birch	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	2	(N/A)	100.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	Declining/Dead	1	(N/A)	5.26	0.02
	Fair	8	(N/A)	42.11	0.16
	Good	0	(N/A)	0.00	0.00
	Poor	10	(N/A)	52.63	0.19
	Total	19	(N/A)	100.00	0.37

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Callery pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	20.00	0.06
	Good	9	(N/A)	60.00	0.17
	Poor	3	(N/A)	20.00	0.06
	Total	15	(N/A)	100.00	0.29
Camphor tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	55	(N/A)	66.27	1.07
	Good	21	(N/A)	25.30	0.41
	Poor	7	(N/A)	8.43	0.14
	Total	83	(N/A)	100.00	1.61
Caucasian ash	Declining/Dead	1	(N/A)	0.50	0.02
	Fair	125	(N/A)	62.19	2.43
	Good	49	(N/A)	24.38	0.95
	Poor	25	(N/A)	12.44	0.49
	Total	200	(N/A)	99.50	3.89
Cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	3.57	0.02
	Good	27	(N/A)	96.43	0.52
	Poor	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	40.00	0.08
	Good	6	(N/A)	60.00	0.12
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Chinese elm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	49	(N/A)	75.38	0.95
	Good	5	(N/A)	7.69	0.10
	Poor	11	(N/A)	16.92	0.21
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	17.65	0.06
	Good	14	(N/A)	82.35	0.27
	Poor	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33
Chinese hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	160	(N/A)	71.75	3.11
	Good	55	(N/A)	24.66	1.07
	Poor	7	(N/A)	3.14	0.14
	Total	222	(N/A)	99.55	4.31
Chinese pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	336	(N/A)	45.78	6.53
	Good	391	(N/A)	53.27	7.60
	Poor	6	(N/A)	0.82	0.12
	Total	733	(N/A)	99.86	14.24
Common fig	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	100.00	0.06
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Date palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Deodar cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	32	(N/A)	43.24	0.62
	Good	42	(N/A)	56.76	0.82
	Poor	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	40	(N/A)	74.07	0.78
	Good	13	(N/A)	24.07	0.25
	Poor	1	(N/A)	1.85	0.02
	Total	54	(N/A)	100.00	1.05
Diospyros	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	11	(N/A)	68.75	0.21
	Good	5	(N/A)	31.25	0.10
	Poor	0	(N/A)	0.00	0.00
	Total	16	(N/A)	100.00	0.31
Elm	Declining/Dead	1	(N/A)	3.85	0.02
	Fair	17	(N/A)	65.38	0.33
	Good	5	(N/A)	19.23	0.10
	Poor	3	(N/A)	11.54	0.06
	Total	26	(N/A)	100.00	0.51
Fan palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	17	(N/A)	28.33	0.33
	Good	41	(N/A)	68.33	0.80
	Poor	2	(N/A)	3.33	0.04
	Total	60	(N/A)	100.00	1.17
Gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	21	(N/A)	58.33	0.41
	Good	14	(N/A)	38.89	0.27
	Poor	1	(N/A)	2.78	0.02
	Total	36	(N/A)	100.00	0.70
Hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Hickory	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	29	(N/A)	80.56	0.56
	Good	5	(N/A)	13.89	0.10
	Poor	2	(N/A)	5.56	0.04
	Total	36	(N/A)	100.00	0.70
Honeylocust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	4	(N/A)	100.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Japanese maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	3	(N/A)	100.00	0.06
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	Declining/Dead	3	(N/A)	1.55	0.06
	Fair	128	(N/A)	66.32	2.49
	Good	58	(N/A)	30.05	1.13
	Poor	4	(N/A)	2.07	0.08
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	Declining/Dead	2	(N/A)	0.34	0.04
	Fair	229	(N/A)	38.75	4.45
	Good	337	(N/A)	57.02	6.55
	Poor	23	(N/A)	3.89	0.45
	Total	591	(N/A)	100.00	11.48
Laurel de olor	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	55.56	0.10
	Good	4	(N/A)	44.44	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	Declining/Dead	1	(N/A)	25.00	0.02
	Fair	1	(N/A)	25.00	0.02
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	35	(N/A)	79.55	0.68
	Good	1	(N/A)	2.27	0.02
	Poor	8	(N/A)	18.18	0.16
	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	72.00	0.35
	Good	2	(N/A)	8.00	0.04
	Poor	4	(N/A)	16.00	0.08
	Total	24	(N/A)	96.00	0.47

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Magnolia	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	9	(N/A)	81.82	0.17
	Good	2	(N/A)	18.18	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	11	(N/A)	100.00	0.21
Mandarin lime	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	Declining/Dead	13	(N/A)	1.87	0.25
	Fair	223	(N/A)	32.04	4.33
	Good	433	(N/A)	62.21	8.41
	Poor	27	(N/A)	3.88	0.52
	Total	696	(N/A)	100.00	13.52
Milktree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	22	(N/A)	75.86	0.43
	Good	6	(N/A)	20.69	0.12
	Poor	1	(N/A)	3.45	0.02
	Total	29	(N/A)	100.00	0.56
Mulberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	13	(N/A)	72.22	0.25
	Good	4	(N/A)	22.22	0.08
	Poor	1	(N/A)	5.56	0.02
	Total	18	(N/A)	100.00	0.35
Northern red oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	114	(N/A)	41.45	2.21
	Good	153	(N/A)	55.64	2.97
	Poor	8	(N/A)	2.91	0.16
	Total	275	(N/A)	100.00	5.34
Northern white cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	0	(N/A)	0.00	0.00
	Poor	1	(N/A)	100.00	0.02
	Total	1	(N/A)	100.00	0.02
Oak	Declining/Dead	1	(N/A)	0.75	0.02
	Fair	78	(N/A)	58.21	1.52
	Good	52	(N/A)	38.81	1.01
	Poor	3	(N/A)	2.24	0.06
	Total	134	(N/A)	100.00	2.60
Olive	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	34	(N/A)	91.89	0.66
	Good	0	(N/A)	0.00	0.00
	Poor	3	(N/A)	8.11	0.06
	Total	37	(N/A)	100.00	0.72
Orange	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	45	(N/A)	37.19	0.87
	Good	72	(N/A)	59.50	1.40
	Poor	4	(N/A)	3.31	0.08
	Total	121	(N/A)	100.00	2.35
Pin oak	Declining/Dead	3	(N/A)	13.04	0.06
	Fair	7	(N/A)	30.43	0.14
	Good	13	(N/A)	56.52	0.25
	Poor	0	(N/A)	0.00	0.00
	Total	23	(N/A)	100.00	0.45
Pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	28	(N/A)	75.68	0.54
	Good	8	(N/A)	21.62	0.16
	Poor	1	(N/A)	2.70	0.02
	Total	37	(N/A)	100.00	0.72
Pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	54.55	0.35
	Good	14	(N/A)	42.42	0.27
	Poor	1	(N/A)	3.03	0.02
	Total	33	(N/A)	100.00	0.64
Red maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	7	(N/A)	18.42	0.14
	Good	27	(N/A)	71.05	0.52
	Poor	4	(N/A)	10.53	0.08
	Total	38	(N/A)	100.00	0.74
Redbud	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	25.00	0.16
	Good	23	(N/A)	71.88	0.45
	Poor	1	(N/A)	3.13	0.02
	Total	32	(N/A)	100.00	0.62
Redwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	12	(N/A)	44.44	0.23
	Good	15	(N/A)	55.56	0.29
	Poor	0	(N/A)	0.00	0.00
	Total	27	(N/A)	100.00	0.52
Roble negro	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	50.00	0.08
	Good	4	(N/A)	50.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Silver maple	Declining/Dead	1	(N/A)	5.00	0.02
	Fair	11	(N/A)	55.00	0.21
	Good	3	(N/A)	15.00	0.06
	Poor	5	(N/A)	25.00	0.10
	Total	20	(N/A)	100.00	0.39
Sweet gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	15	(N/A)	25.86	0.29
	Good	40	(N/A)	68.97	0.78
	Poor	3	(N/A)	5.17	0.06
	Total	58	(N/A)	100.00	1.13

Functional (Foliage) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Sweetgum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	14	(N/A)	25.45	0.27
	Good	41	(N/A)	74.55	0.80
	Poor	0	(N/A)	0.00	0.00
	Total	55	(N/A)	100.00	1.07
Sycamore	Declining/Dead	3	(N/A)	0.71	0.06
	Fair	247	(N/A)	58.53	4.80
	Good	154	(N/A)	36.49	2.99
	Poor	18	(N/A)	4.27	0.35
	Total	422	(N/A)	100.00	8.20
Tulip tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	5.62	0.10
	Good	84	(N/A)	94.38	1.63
	Poor	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	Declining/Dead	9	(N/A)	16.67	0.17
	Fair	23	(N/A)	42.59	0.45
	Good	0	(N/A)	0.00	0.00
	Poor	22	(N/A)	40.74	0.43
	Total	54	(N/A)	100.00	1.05
Walnut	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	6.25	0.08
	Good	60	(N/A)	93.75	1.17
	Poor	0	(N/A)	0.00	0.00
	Total	64	(N/A)	100.00	1.24
Willow	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	33.33	0.02
	Good	2	(N/A)	66.67	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Ailanthus	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	50.00	0.04
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Alder	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	Declining/Dead	4	(N/A)	4.60	0.08
	Fair	31	(N/A)	35.63	0.60
	Good	1	(N/A)	1.15	0.02
	Poor	51	(N/A)	58.62	0.99
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	111	(N/A)	99.11	2.16
	Good	1	(N/A)	0.89	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	112	(N/A)	100.00	2.18
Ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Bald cypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	75.00	0.06
	Good	1	(N/A)	25.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	10	(N/A)	43.48	0.19
	Good	11	(N/A)	47.83	0.21
	Poor	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Birch	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	2	(N/A)	100.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	Declining/Dead	1	(N/A)	5.26	0.02
	Fair	8	(N/A)	42.11	0.16
	Good	0	(N/A)	0.00	0.00
	Poor	10	(N/A)	52.63	0.19
	Total	19	(N/A)	100.00	0.37

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Callery pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	20.00	0.06
	Good	9	(N/A)	60.00	0.17
	Poor	3	(N/A)	20.00	0.06
	Total	15	(N/A)	100.00	0.29
Camphor tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	55	(N/A)	66.27	1.07
	Good	21	(N/A)	25.30	0.41
	Poor	7	(N/A)	8.43	0.14
	Total	83	(N/A)	100.00	1.61
Caucasian ash	Declining/Dead	1	(N/A)	0.50	0.02
	Fair	125	(N/A)	62.19	2.43
	Good	49	(N/A)	24.38	0.95
	Poor	25	(N/A)	12.44	0.49
	Total	200	(N/A)	99.50	3.89
Cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	3.57	0.02
	Good	27	(N/A)	96.43	0.52
	Poor	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	40.00	0.08
	Good	6	(N/A)	60.00	0.12
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Chinese elm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	49	(N/A)	75.38	0.95
	Good	5	(N/A)	7.69	0.10
	Poor	11	(N/A)	16.92	0.21
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	17.65	0.06
	Good	14	(N/A)	82.35	0.27
	Poor	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33
Chinese hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	160	(N/A)	71.75	3.11
	Good	55	(N/A)	24.66	1.07
	Poor	7	(N/A)	3.14	0.14
	Total	222	(N/A)	99.55	4.31
Chinese pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	336	(N/A)	45.78	6.53
	Good	391	(N/A)	53.27	7.60
	Poor	6	(N/A)	0.82	0.12
	Total	733	(N/A)	99.86	14.24
Common fig	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	3	(N/A)	100.00	0.06
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Date palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Deodar cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	32	(N/A)	43.24	0.62
	Good	42	(N/A)	56.76	0.82
	Poor	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	40	(N/A)	74.07	0.78
	Good	13	(N/A)	24.07	0.25
	Poor	1	(N/A)	1.85	0.02
	Total	54	(N/A)	100.00	1.05
Diospyros	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	100.00	0.08
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	11	(N/A)	68.75	0.21
	Good	5	(N/A)	31.25	0.10
	Poor	0	(N/A)	0.00	0.00
	Total	16	(N/A)	100.00	0.31
Elm	Declining/Dead	1	(N/A)	3.85	0.02
	Fair	17	(N/A)	65.38	0.33
	Good	5	(N/A)	19.23	0.10
	Poor	3	(N/A)	11.54	0.06
	Total	26	(N/A)	100.00	0.51
Fan palm	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	17	(N/A)	28.33	0.33
	Good	41	(N/A)	68.33	0.80
	Poor	2	(N/A)	3.33	0.04
	Total	60	(N/A)	100.00	1.17
Gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	21	(N/A)	58.33	0.41
	Good	14	(N/A)	38.89	0.27
	Poor	1	(N/A)	2.78	0.02
	Total	36	(N/A)	100.00	0.70
Hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Hickory	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	29	(N/A)	80.56	0.56
	Good	5	(N/A)	13.89	0.10
	Poor	2	(N/A)	5.56	0.04
	Total	36	(N/A)	100.00	0.70
Honeylocust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	4	(N/A)	100.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Japanese maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	3	(N/A)	100.00	0.06
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	Declining/Dead	3	(N/A)	1.55	0.06
	Fair	128	(N/A)	66.32	2.49
	Good	58	(N/A)	30.05	1.13
	Poor	4	(N/A)	2.07	0.08
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	Declining/Dead	2	(N/A)	0.34	0.04
	Fair	229	(N/A)	38.75	4.45
	Good	337	(N/A)	57.02	6.55
	Poor	23	(N/A)	3.89	0.45
	Total	591	(N/A)	100.00	11.48
Laurel de olor	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	55.56	0.10
	Good	4	(N/A)	44.44	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	Declining/Dead	1	(N/A)	25.00	0.02
	Fair	1	(N/A)	25.00	0.02
	Good	2	(N/A)	50.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	35	(N/A)	79.55	0.68
	Good	1	(N/A)	2.27	0.02
	Poor	8	(N/A)	18.18	0.16
	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	100.00	0.02
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	72.00	0.35
	Good	2	(N/A)	8.00	0.04
	Poor	4	(N/A)	16.00	0.08
	Total	24	(N/A)	96.00	0.47

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Magnolia	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	9	(N/A)	81.82	0.17
	Good	2	(N/A)	18.18	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	11	(N/A)	100.00	0.21
Mandarin lime	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	Declining/Dead	13	(N/A)	1.87	0.25
	Fair	223	(N/A)	32.04	4.33
	Good	433	(N/A)	62.21	8.41
	Poor	27	(N/A)	3.88	0.52
	Total	696	(N/A)	100.00	13.52
Milktree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	22	(N/A)	75.86	0.43
	Good	6	(N/A)	20.69	0.12
	Poor	1	(N/A)	3.45	0.02
	Total	29	(N/A)	100.00	0.56
Mulberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	6	(N/A)	75.00	0.12
	Good	2	(N/A)	25.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	13	(N/A)	72.22	0.25
	Good	4	(N/A)	22.22	0.08
	Poor	1	(N/A)	5.56	0.02
	Total	18	(N/A)	100.00	0.35
Northern red oak	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	114	(N/A)	41.45	2.21
	Good	153	(N/A)	55.64	2.97
	Poor	8	(N/A)	2.91	0.16
	Total	275	(N/A)	100.00	5.34
Northern white cedar	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	0	(N/A)	0.00	0.00
	Poor	1	(N/A)	100.00	0.02
	Total	1	(N/A)	100.00	0.02
Oak	Declining/Dead	1	(N/A)	0.75	0.02
	Fair	78	(N/A)	58.21	1.52
	Good	52	(N/A)	38.81	1.01
	Poor	3	(N/A)	2.24	0.06
	Total	134	(N/A)	100.00	2.60
Olive	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	34	(N/A)	91.89	0.66
	Good	0	(N/A)	0.00	0.00
	Poor	3	(N/A)	8.11	0.06
	Total	37	(N/A)	100.00	0.72
Orange	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	80.00	0.16
	Good	2	(N/A)	20.00	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Pear	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	45	(N/A)	37.19	0.87
	Good	72	(N/A)	59.50	1.40
	Poor	4	(N/A)	3.31	0.08
	Total	121	(N/A)	100.00	2.35
Pin oak	Declining/Dead	3	(N/A)	13.04	0.06
	Fair	7	(N/A)	30.43	0.14
	Good	13	(N/A)	56.52	0.25
	Poor	0	(N/A)	0.00	0.00
	Total	23	(N/A)	100.00	0.45
Pine	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	28	(N/A)	75.68	0.54
	Good	8	(N/A)	21.62	0.16
	Poor	1	(N/A)	2.70	0.02
	Total	37	(N/A)	100.00	0.72
Pistache	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	0	(N/A)	0.00	0.00
	Good	1	(N/A)	100.00	0.02
	Poor	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	18	(N/A)	54.55	0.35
	Good	14	(N/A)	42.42	0.27
	Poor	1	(N/A)	3.03	0.02
	Total	33	(N/A)	100.00	0.64
Red maple	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	7	(N/A)	18.42	0.14
	Good	27	(N/A)	71.05	0.52
	Poor	4	(N/A)	10.53	0.08
	Total	38	(N/A)	100.00	0.74
Redbud	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	8	(N/A)	25.00	0.16
	Good	23	(N/A)	71.88	0.45
	Poor	1	(N/A)	3.13	0.02
	Total	32	(N/A)	100.00	0.62
Redwood	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	12	(N/A)	44.44	0.23
	Good	15	(N/A)	55.56	0.29
	Poor	0	(N/A)	0.00	0.00
	Total	27	(N/A)	100.00	0.52
Roble negro	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	50.00	0.08
	Good	4	(N/A)	50.00	0.08
	Poor	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Silver maple	Declining/Dead	1	(N/A)	5.00	0.02
	Fair	11	(N/A)	55.00	0.21
	Good	3	(N/A)	15.00	0.06
	Poor	5	(N/A)	25.00	0.10
	Total	20	(N/A)	100.00	0.39
Sweet gum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	15	(N/A)	25.86	0.29
	Good	40	(N/A)	68.97	0.78
	Poor	3	(N/A)	5.17	0.06
	Total	58	(N/A)	100.00	1.13

Structural (Woody) Condition of Public Trees by Species

6/8/2015

Species	Condition	Tree Count	Standard Error	% of Species	% of Public Trees
Sweetgum	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	14	(N/A)	25.45	0.27
	Good	41	(N/A)	74.55	0.80
	Poor	0	(N/A)	0.00	0.00
	Total	55	(N/A)	100.00	1.07
Sycamore	Declining/Dead	3	(N/A)	0.71	0.06
	Fair	247	(N/A)	58.53	4.80
	Good	154	(N/A)	36.49	2.99
	Poor	18	(N/A)	4.27	0.35
	Total	422	(N/A)	100.00	8.20
Tulip tree	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	5	(N/A)	5.62	0.10
	Good	84	(N/A)	94.38	1.63
	Poor	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	Declining/Dead	9	(N/A)	16.67	0.17
	Fair	23	(N/A)	42.59	0.45
	Good	0	(N/A)	0.00	0.00
	Poor	22	(N/A)	40.74	0.43
	Total	54	(N/A)	100.00	1.05
Walnut	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	2	(N/A)	100.00	0.04
	Good	0	(N/A)	0.00	0.00
	Poor	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	4	(N/A)	6.25	0.08
	Good	60	(N/A)	93.75	1.17
	Poor	0	(N/A)	0.00	0.00
	Total	64	(N/A)	100.00	1.24
Willow	Declining/Dead	0	(N/A)	0.00	0.00
	Fair	1	(N/A)	33.33	0.02
	Good	2	(N/A)	66.67	0.04
	Poor	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Ailanthus	no	3	(N/A)	75.00	0.06
	yes	1	(N/A)	25.00	0.02
	Total	4	(N/A)	100.00	0.08
Alder	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	no	73	(N/A)	83.91	1.42
	yes	14	(N/A)	16.09	0.27
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	no	112	(N/A)	100.00	2.18
	yes	0	(N/A)	0.00	0.00
	Total	112	(N/A)	100.00	2.18
Ash	no	6	(N/A)	75.00	0.12
	yes	2	(N/A)	25.00	0.04
	Total	8	(N/A)	100.00	0.16
Bald cypress	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	no	21	(N/A)	91.30	0.41
	yes	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Birch	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	no	18	(N/A)	94.74	0.35
	yes	1	(N/A)	5.26	0.02
	Total	19	(N/A)	100.00	0.37
Callery pear	no	15	(N/A)	100.00	0.29
	yes	0	(N/A)	0.00	0.00
	Total	15	(N/A)	100.00	0.29
Camphor tree	no	60	(N/A)	72.29	1.17
	yes	23	(N/A)	27.71	0.45
	Total	83	(N/A)	100.00	1.61
Caucasian ash	no	156	(N/A)	77.61	3.03
	yes	45	(N/A)	22.39	0.87
	Total	201	(N/A)	100.00	3.91
Cedar	no	28	(N/A)	100.00	0.54
	yes	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Chinese elm	no	31	(N/A)	47.69	0.60
	yes	34	(N/A)	52.31	0.66
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	no	17	(N/A)	100.00	0.33
	yes	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Chinese hackberry	no	164	(N/A)	73.54	3.19
	yes	59	(N/A)	26.46	1.15
	Total	223	(N/A)	100.00	4.33
Chinese pistache	no	583	(N/A)	79.43	11.33
	yes	151	(N/A)	20.57	2.93
	Total	734	(N/A)	100.00	14.26
Common fig	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Date palm	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Deodar cedar	no	74	(N/A)	100.00	1.44
	yes	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	no	54	(N/A)	100.00	1.05
	yes	0	(N/A)	0.00	0.00
	Total	54	(N/A)	100.00	1.05
Diospyros	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	no	15	(N/A)	93.75	0.29
	yes	1	(N/A)	6.25	0.02
	Total	16	(N/A)	100.00	0.31
Elm	no	25	(N/A)	96.15	0.49
	yes	1	(N/A)	3.85	0.02
	Total	26	(N/A)	100.00	0.51
Fan palm	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	no	56	(N/A)	93.33	1.09
	yes	4	(N/A)	6.67	0.08
	Total	60	(N/A)	100.00	1.17
Gum	no	34	(N/A)	94.44	0.66
	yes	2	(N/A)	5.56	0.04
	Total	36	(N/A)	100.00	0.70
Hackberry	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Hickory	no	26	(N/A)	72.22	0.51
	yes	10	(N/A)	27.78	0.19
	Total	36	(N/A)	100.00	0.70
Honeylocust	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Japanese maple	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	no	139	(N/A)	72.02	2.70
	yes	54	(N/A)	27.98	1.05
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	no	563	(N/A)	95.26	10.94
	yes	28	(N/A)	4.74	0.54
	Total	591	(N/A)	100.00	11.48
Laurel de olor	no	7	(N/A)	77.78	0.14
	yes	2	(N/A)	22.22	0.04
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	no	38	(N/A)	86.36	0.74
	yes	6	(N/A)	13.64	0.12
	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	no	22	(N/A)	88.00	0.43
	yes	2	(N/A)	8.00	0.04
	Total	24	(N/A)	96.00	0.47
Magnolia	no	9	(N/A)	81.82	0.17
	yes	2	(N/A)	18.18	0.04
	Total	11	(N/A)	100.00	0.21
Mandarin lime	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	no	687	(N/A)	98.71	13.35
	yes	9	(N/A)	1.29	0.17
	Total	696	(N/A)	100.00	13.52
Milktree	no	23	(N/A)	79.31	0.45
	yes	6	(N/A)	20.69	0.12
	Total	29	(N/A)	100.00	0.56
Mulberry	no	8	(N/A)	100.00	0.16
	yes	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	no	9	(N/A)	50.00	0.17
	yes	9	(N/A)	50.00	0.17
	Total	18	(N/A)	100.00	0.35
Northern red oak	no	227	(N/A)	82.55	4.41
	yes	47	(N/A)	17.09	0.91
	Total	274	(N/A)	99.64	5.32
Northern white cedar	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Oak	no	130	(N/A)	97.01	2.53
	yes	4	(N/A)	2.99	0.08
	Total	134	(N/A)	100.00	2.60
Olive	no	37	(N/A)	100.00	0.72
	yes	0	(N/A)	0.00	0.00
	Total	37	(N/A)	100.00	0.72

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Orange	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Pear	no	120	(N/A)	99.17	2.33
	yes	1	(N/A)	0.83	0.02
	Total	121	(N/A)	100.00	2.35
Pin oak	no	23	(N/A)	100.00	0.45
	yes	0	(N/A)	0.00	0.00
	Total	23	(N/A)	100.00	0.45
Pine	no	37	(N/A)	100.00	0.72
	yes	0	(N/A)	0.00	0.00
	Total	37	(N/A)	100.00	0.72
Pistache	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	no	31	(N/A)	93.94	0.60
	yes	2	(N/A)	6.06	0.04
	Total	33	(N/A)	100.00	0.64
Red maple	no	33	(N/A)	86.84	0.64
	yes	4	(N/A)	10.53	0.08
	Total	37	(N/A)	97.37	0.72
Redbud	no	32	(N/A)	100.00	0.62
	yes	0	(N/A)	0.00	0.00
	Total	32	(N/A)	100.00	0.62
Redwood	no	21	(N/A)	77.78	0.41
	yes	6	(N/A)	22.22	0.12
	Total	27	(N/A)	100.00	0.52
Roble negro	no	8	(N/A)	100.00	0.16
	yes	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Silver maple	no	14	(N/A)	70.00	0.27
	yes	6	(N/A)	30.00	0.12
	Total	20	(N/A)	100.00	0.39
Sweet gum	no	49	(N/A)	84.48	0.95
	yes	9	(N/A)	15.52	0.17
	Total	58	(N/A)	100.00	1.13
Sweetgum	no	50	(N/A)	90.91	0.97
	yes	5	(N/A)	9.09	0.10
	Total	55	(N/A)	100.00	1.07
Sycamore	no	359	(N/A)	85.07	6.97
	yes	63	(N/A)	14.93	1.22
	Total	422	(N/A)	100.00	8.20
Tulip tree	no	89	(N/A)	100.00	1.73
	yes	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	no	48	(N/A)	88.89	0.93
	yes	6	(N/A)	11.11	0.12
	Total	54	(N/A)	100.00	1.05
Walnut	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	no	64	(N/A)	100.00	1.24
	yes	0	(N/A)	0.00	0.00
	Total	64	(N/A)	100.00	1.24

Sidewalk Heave Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Willow	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Ailanthus	no	2	(N/A)	50.00	0.04
	yes	2	(N/A)	50.00	0.04
	Total	4	(N/A)	100.00	0.08
Alder	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
American elm	no	79	(N/A)	90.80	1.53
	yes	8	(N/A)	9.20	0.16
	Total	87	(N/A)	100.00	1.69
Arecastrum palm	no	108	(N/A)	96.43	2.10
	yes	4	(N/A)	3.57	0.08
	Total	112	(N/A)	100.00	2.18
Ash	no	7	(N/A)	87.50	0.14
	yes	1	(N/A)	12.50	0.02
	Total	8	(N/A)	100.00	0.16
Bald cypress	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Baldcypress	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Basswood	no	18	(N/A)	78.26	0.35
	yes	5	(N/A)	21.74	0.10
	Total	23	(N/A)	100.00	0.45
Birch	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Black locust	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
California sycamore	no	15	(N/A)	78.95	0.29
	yes	4	(N/A)	21.05	0.08
	Total	19	(N/A)	100.00	0.37
Callery pear	no	15	(N/A)	100.00	0.29
	yes	0	(N/A)	0.00	0.00
	Total	15	(N/A)	100.00	0.29
Camphor tree	no	67	(N/A)	80.72	1.30
	yes	16	(N/A)	19.28	0.31
	Total	83	(N/A)	100.00	1.61
Caucasian ash	no	175	(N/A)	87.06	3.40
	yes	25	(N/A)	12.44	0.49
	Total	200	(N/A)	99.50	3.89
Cedar	no	28	(N/A)	100.00	0.54
	yes	0	(N/A)	0.00	0.00
	Total	28	(N/A)	100.00	0.54
Cherry plum	no	4	(N/A)	40.00	0.08
	yes	6	(N/A)	60.00	0.12
	Total	10	(N/A)	100.00	0.19
Chinese elm	no	31	(N/A)	47.69	0.60
	yes	34	(N/A)	52.31	0.66
	Total	65	(N/A)	100.00	1.26
Chinese flame tree	no	17	(N/A)	100.00	0.33
	yes	0	(N/A)	0.00	0.00
	Total	17	(N/A)	100.00	0.33

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Chinese hackberry	no	201	(N/A)	90.13	3.91
	yes	21	(N/A)	9.42	0.41
	Total	222	(N/A)	99.55	4.31
Chinese pistache	no	580	(N/A)	79.02	11.27
	yes	153	(N/A)	20.84	2.97
	Total	733	(N/A)	99.86	14.24
Common fig	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Cottonwood	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Date palm	no	3	(N/A)	75.00	0.06
	yes	1	(N/A)	25.00	0.02
	Total	4	(N/A)	100.00	0.08
Deodar cedar	no	74	(N/A)	100.00	1.44
	yes	0	(N/A)	0.00	0.00
	Total	74	(N/A)	100.00	1.44
Digger pine	no	48	(N/A)	88.89	0.93
	yes	6	(N/A)	11.11	0.12
	Total	54	(N/A)	100.00	1.05
Diospyros	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Dogwood	no	15	(N/A)	93.75	0.29
	yes	1	(N/A)	6.25	0.02
	Total	16	(N/A)	100.00	0.31
Elm	no	26	(N/A)	100.00	0.51
	yes	0	(N/A)	0.00	0.00
	Total	26	(N/A)	100.00	0.51
Fan palm	no	10	(N/A)	100.00	0.19
	yes	0	(N/A)	0.00	0.00
	Total	10	(N/A)	100.00	0.19
Flowering dogwood	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Ginkgo	no	58	(N/A)	96.67	1.13
	yes	2	(N/A)	3.33	0.04
	Total	60	(N/A)	100.00	1.17
Gum	no	35	(N/A)	97.22	0.68
	yes	1	(N/A)	2.78	0.02
	Total	36	(N/A)	100.00	0.70
Hackberry	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Hickory	no	36	(N/A)	100.00	0.70
	yes	0	(N/A)	0.00	0.00
	Total	36	(N/A)	100.00	0.70
Honeylocust	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
Interior live oak	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Japanese maple	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06
Japanese zelkova	no	116	(N/A)	60.10	2.25
	yes	77	(N/A)	39.90	1.50
	Total	193	(N/A)	100.00	3.75
Lagerstroemia	no	430	(N/A)	72.76	8.35
	yes	160	(N/A)	27.07	3.11
	Total	590	(N/A)	99.83	11.46
Laurel de olor	no	9	(N/A)	100.00	0.17
	yes	0	(N/A)	0.00	0.00
	Total	9	(N/A)	100.00	0.17
Littleleaf linden	no	4	(N/A)	100.00	0.08
	yes	0	(N/A)	0.00	0.00
	Total	4	(N/A)	100.00	0.08
Locust	no	32	(N/A)	72.73	0.62
	yes	12	(N/A)	27.27	0.23
	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
London planetree	no	24	(N/A)	96.00	0.47
	yes	0	(N/A)	0.00	0.00
	Total	24	(N/A)	96.00	0.47
Magnolia	no	8	(N/A)	72.73	0.16
	yes	3	(N/A)	27.27	0.06
	Total	11	(N/A)	100.00	0.21
Mandarin lime	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Maple	no	611	(N/A)	87.79	11.87
	yes	85	(N/A)	12.21	1.65
	Total	696	(N/A)	100.00	13.52
Milktree	no	24	(N/A)	82.76	0.47
	yes	5	(N/A)	17.24	0.10
	Total	29	(N/A)	100.00	0.56
Mulberry	no	8	(N/A)	100.00	0.16
	yes	0	(N/A)	0.00	0.00
	Total	8	(N/A)	100.00	0.16
Northern hackberry	no	17	(N/A)	94.44	0.33
	yes	0	(N/A)	0.00	0.00
	Total	17	(N/A)	94.44	0.33
Northern red oak	no	220	(N/A)	80.00	4.27
	yes	55	(N/A)	20.00	1.07
	Total	275	(N/A)	100.00	5.34
Northern white cedar	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Oak	no	130	(N/A)	97.01	2.53
	yes	4	(N/A)	2.99	0.08
	Total	134	(N/A)	100.00	2.60
Olive	no	6	(N/A)	16.22	0.12
	yes	31	(N/A)	83.78	0.60
	Total	37	(N/A)	100.00	0.72

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Orange	no	8	(N/A)	80.00	0.16
	yes	2	(N/A)	20.00	0.04
	Total	10	(N/A)	100.00	0.19
Pear	no	75	(N/A)	61.98	1.46
	yes	46	(N/A)	38.02	0.89
	Total	121	(N/A)	100.00	2.35
Pin oak	no	21	(N/A)	91.30	0.41
	yes	2	(N/A)	8.70	0.04
	Total	23	(N/A)	100.00	0.45
Pine	no	36	(N/A)	97.30	0.70
	yes	1	(N/A)	2.70	0.02
	Total	37	(N/A)	100.00	0.72
Pistache	no	1	(N/A)	100.00	0.02
	yes	0	(N/A)	0.00	0.00
	Total	1	(N/A)	100.00	0.02
Plum	no	26	(N/A)	78.79	0.51
	yes	7	(N/A)	21.21	0.14
	Total	33	(N/A)	100.00	0.64
Red maple	no	38	(N/A)	100.00	0.74
	yes	0	(N/A)	0.00	0.00
	Total	38	(N/A)	100.00	0.74
Redbud	no	12	(N/A)	37.50	0.23
	yes	20	(N/A)	62.50	0.39
	Total	32	(N/A)	100.00	0.62
Redwood	no	22	(N/A)	81.48	0.43
	yes	5	(N/A)	18.52	0.10
	Total	27	(N/A)	100.00	0.52
Roble negro	no	5	(N/A)	62.50	0.10
	yes	3	(N/A)	37.50	0.06
	Total	8	(N/A)	100.00	0.16
Silver maple	no	17	(N/A)	85.00	0.33
	yes	3	(N/A)	15.00	0.06
	Total	20	(N/A)	100.00	0.39
Sweet gum	no	58	(N/A)	100.00	1.13
	yes	0	(N/A)	0.00	0.00
	Total	58	(N/A)	100.00	1.13
Sweetgum	no	47	(N/A)	85.45	0.91
	yes	8	(N/A)	14.55	0.16
	Total	55	(N/A)	100.00	1.07
Sycamore	no	346	(N/A)	81.99	6.72
	yes	76	(N/A)	18.01	1.48
	Total	422	(N/A)	100.00	8.20
Tulip tree	no	89	(N/A)	100.00	1.73
	yes	0	(N/A)	0.00	0.00
	Total	89	(N/A)	100.00	1.73
Velvet ash	no	30	(N/A)	55.56	0.58
	yes	24	(N/A)	44.44	0.47
	Total	54	(N/A)	100.00	1.05
Walnut	no	2	(N/A)	100.00	0.04
	yes	0	(N/A)	0.00	0.00
	Total	2	(N/A)	100.00	0.04
White ash	no	44	(N/A)	68.75	0.85
	yes	20	(N/A)	31.25	0.39
	Total	64	(N/A)	100.00	1.24

Overhead Utility Lines Conflicts by Species for All Trees

6/8/2015

Species	Conflict	Tree Count	Standard Error	% of Species	% of All Trees
Willow	no	3	(N/A)	100.00	0.06
	yes	0	(N/A)	0.00	0.00
	Total	3	(N/A)	100.00	0.06

Oroville

Importance Values of Public Trees

6/8/2015

Species	Number of Trees	% of Total Trees	Leaf Area (ft²)	% of Total Leaf Area	Canopy Cover (ft²)	% of Total Canopy Cover	Importance Value
Chinese pistache	734	14.27	2,096,467	14.89	556,848	15.00	14.72
Maple	696	13.53	410,717	2.92	148,568	4.00	6.82
Lagerstroemia	591	11.49	607,669	4.32	210,351	5.67	7.16
Sycamore	422	8.21	1,934,507	13.74	513,969	13.84	11.93
Northern red oak	275	5.35	365,802	2.60	121,772	3.28	3.74
Chinese hackberry	223	4.34	615,900	4.38	180,601	4.86	4.53
Caucasian ash	201	3.91	304,148	2.16	107,017	2.88	2.98
Japanese zelkova	192	3.73	595,663	4.23	182,557	4.92	4.29
Oak	134	2.61	306,171	2.18	75,205	2.03	2.27
Pear	121	2.35	112,922	0.80	39,012	1.05	1.40
Arecastrum palm	112	2.18	127,282	0.90	122,207	3.29	2.12
Tulip tree	89	1.73	186,876	1.33	33,837	0.91	1.32
American elm	87	1.69	958,053	6.81	231,540	6.24	4.91
Camphor tree	83	1.61	1,096,961	7.79	115,731	3.12	4.17
Deodar cedar	74	1.44	356,001	2.53	115,584	3.11	2.36
Chinese elm	65	1.26	536,420	3.81	114,314	3.08	2.72
White ash	64	1.24	16,726	0.12	3,370	0.09	0.48
Ginkgo	60	1.17	102,748	0.73	12,033	0.32	0.74
Sweet gum	58	1.13	314,455	2.23	84,928	2.29	1.88
Sweetgum	55	1.07	149,015	1.06	22,274	0.60	0.91
Digger pine	54	1.05	277,205	1.97	88,064	2.37	1.80
Velvet ash	54	1.05	226,323	1.61	70,234	1.89	1.52
Locust	44	0.86	245,561	1.74	51,711	1.39	1.33
Red maple	38	0.74	25,849	0.18	10,193	0.27	0.40
Olive	37	0.72	289,179	2.05	46,417	1.25	1.34
Pine	37	0.72	122,352	0.87	33,418	0.90	0.83
Hickory	36	0.70	112,150	0.80	38,494	1.04	0.84
Gum	36	0.70	357,235	2.54	67,119	1.81	1.68
Plum	33	0.64	11,727	0.08	4,076	0.11	0.28
Redbud	32	0.62	6,518	0.05	2,334	0.06	0.24
Milktree	29	0.56	66,535	0.47	23,357	0.63	0.56
Cedar	28	0.54	40,650	0.29	9,222	0.25	0.36
Redwood	27	0.52	116,474	0.83	35,233	0.95	0.77
Elm	26	0.51	242,958	1.73	39,629	1.07	1.10
Pin oak	23	0.45	17,312	0.12	6,422	0.17	0.25
Basswood	23	0.45	19,420	0.14	6,582	0.18	0.25
London planetree	22	0.43	76,917	0.55	26,400	0.71	0.56
Silver maple	20	0.39	231,960	1.65	44,116	1.19	1.07
California sycamore	19	0.37	52,957	0.38	16,106	0.43	0.39
Northern hackberry	18	0.35	68,227	0.48	18,476	0.50	0.44
Chinese flame tree	17	0.33	6,762	0.05	1,741	0.05	0.14
Dogwood	16	0.31	11,396	0.08	3,932	0.11	0.17
Callery pear	15	0.29	15,449	0.11	5,155	0.14	0.18
Magnolia	11	0.21	24,255	0.17	6,755	0.18	0.19
Orange	10	0.19	13,465	0.10	5,063	0.14	0.14
Fan palm	10	0.19	3,648	0.03	1,952	0.05	0.09
Cherry plum	10	0.19	4,079	0.03	1,352	0.04	0.09
Laurel de olor	9	0.17	17,267	0.12	6,470	0.17	0.16
Mulberry	8	0.16	20,088	0.14	6,829	0.18	0.16
Ash	8	0.16	12,631	0.09	4,320	0.12	0.12
Roble negro	8	0.16	13,064	0.09	4,535	0.12	0.12
Ailanthus	4	0.08	10,013	0.07	3,592	0.10	0.08
Bald cypress	4	0.08	11,686	0.08	2,675	0.07	0.08
Date palm	4	0.08	4,546	0.03	4,418	0.12	0.08
Interior live oak	4	0.08	862	0.01	248	0.01	0.03
Littleleaf linden	4	0.08	3,241	0.02	1,114	0.03	0.04

Importance Values of Public Trees

6/8/2015

Species	Number of Trees	% of Total Trees	Leaf Area (ft²)	% of Total Leaf Area	Canopy Cover (ft²)	% of Total Canopy Cover	Importance Value
Diospyros	4	0.08	2,650	0.02	873	0.02	0.04
Cottonwood	3	0.06	7,401	0.05	2,272	0.06	0.06
Japanese maple	3	0.06	5,678	0.04	2,383	0.06	0.05
Willow	3	0.06	1,840	0.01	595	0.02	0.03
Birch	2	0.04	439	0.00	76	0.00	0.01
Honeylocust	2	0.04	1,224	0.01	663	0.02	0.02
Walnut	2	0.04	23,656	0.17	5,650	0.15	0.12
Mandarin lime	1	0.02	1,626	0.01	653	0.02	0.02
Black locust	1	0.02	38,519	0.27	3,831	0.10	0.13
Alder	1	0.02	1,753	0.01	660	0.02	0.02
Flowering dogwood	1	0.02	825	0.01	277	0.01	0.01
Northern white cedar	1	0.02	884	0.01	195	0.01	0.01
Pistache	1	0.02	810	0.01	279	0.01	0.01
Hackberry	1	0.02	2,412	0.02	768	0.02	0.02
Common fig	1	0.02	852	0.01	260	0.01	0.01
Baldcypress	1	0.02	7,995	0.06	2,882	0.08	0.05
Locust	1	0.02	3,254	0.02	1,136	0.03	0.02
Total	5,143	100.00	14,076,286	100.00	3,712,926	100.00	100.00

Oroville

Land Use of Public Trees by Zone

6/8/2015

Zone	Land Use	Tree Count	Standard Error	% of Zone	% of Public Trees
1	Residential	3,196	(N/A)	62.09	62.24
	Commercial	621	(N/A)	12.07	12.09
	Industrial	137	(N/A)	2.66	2.67
	Public Park/Open Space	1,181	(N/A)	22.95	23.00
	Total	5,135	(N/A)	99.77	100.00
Citywide	Residential	3,196	(N/A)	62.24	62.24
	Commercial	621	(N/A)	12.09	12.09
	Industrial	137	(N/A)	2.67	2.67
	Public Park/Open Space	1,181	(N/A)	23.00	23.00
	Total	5,135	(N/A)	100.00	100.00

Oroville

Complete Population of Public Trees

6/8/2015

Species	DBH Class (in) 0-4	4-9	9-15	15-22	22-30	> 30	Total Standard Error
Broadleaf Deciduous Large (BDL)							
Sycamore	60	66	111	80	59	46	422 (±0)
Northern red oak	68	87	67	39	13	1	275 (±0)
Chinese hackberry	16	69	79	48	7	4	223 (±0)
Oak	56	24	16	16	14	8	134 (±0)
Tulip tree	8	41	22	14	4	0	89 (±0)
American elm	0	0	3	6	39	39	87 (±0)
Chinese elm	5	3	8	16	30	3	65 (±0)
White ash	64	0	0	0	0	0	64 (±0)
Sweet gum	1	7	15	21	6	8	58 (±0)
Sweetgum	3	34	4	9	4	1	55 (±0)
Velvet ash	0	0	8	22	15	9	54 (±0)
Locust	1	11	20	4	4	4	44 (±0)
Elm	3	3	8	3	2	7	26 (±0)
London planetree	0	3	5	10	3	1	25 (±0)
Pin oak	11	4	6	2	0	0	23 (±0)
Silver maple	1	0	2	3	1	13	20 (±0)
California sycamore	1	3	11	3	1	0	19 (±0)
Northern hackberry	2	2	9	3	0	2	18 (±0)
Cottonwood	1	0	1	1	0	0	3 (±0)
Walnut	0	0	0	0	1	1	2 (±0)
Honeylocust	0	2	0	0	0	0	2 (±0)
Baldcypress	0	0	0	0	0	1	1 (±0)
Hackberry	0	0	1	0	0	0	1 (±0)
Total	**301**	**359**	**396**	**300**	**203**	**148**	**1,710 (±0)**
Broadleaf Deciduous Medium (BDM)							
Chinese pistache	116	235	233	113	33	4	734 (±0)
Maple	455	204	20	14	2	1	696 (±0)
Lagerstroemia	176	240	132	38	5	0	591 (±0)
Caucasian ash	30	73	58	30	4	6	201 (±0)
Japanese zelkova	39	44	44	46	18	1	193 (±0)
Pear	29	66	21	5	0	0	121 (±0)
Ginkgo	46	2	3	3	3	3	60 (±0)
Red maple	19	15	4	0	0	0	38 (±0)
Hickory	2	1	6	8	5	14	36 (±0)
Milktree	1	7	6	13	2	0	29 (±0)
Basswood	6	14	2	1	0	0	23 (±0)
Chinese flame tree	16	0	0	1	0	0	17 (±0)
Callery pear	7	4	2	1	1	0	15 (±0)
Mulberry	1	2	0	2	3	0	8 (±0)
Ash	2	3	0	3	0	0	8 (±0)
Ailanthus	0	0	2	2	0	0	4 (±0)
Diospyros	1	3	0	0	0	0	4 (±0)
Littleleaf linden	0	4	0	0	0	0	4 (±0)
Willow	1	2	0	0	0	0	3 (±0)
Birch	2	0	0	0	0	0	2 (±0)
Black locust	0	0	0	0	0	1	1 (±0)
Alder	0	0	1	0	0	0	1 (±0)
Pistache	0	1	0	0	0	0	1 (±0)
Locust	0	0	0	1	0	0	1 (±0)
Total	**949**	**920**	**534**	**281**	**76**	**30**	**2,791 (±0)**
Broadleaf Deciduous Small (BDS)							
Plum	16	13	3	1	0	0	33 (±0)
Redbud	27	1	4	0	0	0	32 (±0)
Cherry plum	5	2	3	0	0	0	10 (±0)
Japanese maple	0	0	3	0	0	0	3 (±0)
Common fig	0	0	0	0	0	1	1 (±0)
Total	**48**	**16**	**13**	**1**	**0**	**1**	**79 (±0)**
Broadleaf Evergreen Large (BEL)							
Gum	0	1	1	8	7	19	36 (±0)
Roble negro	3	1	0	4	0	0	8 (±0)

Complete Population of Public Trees

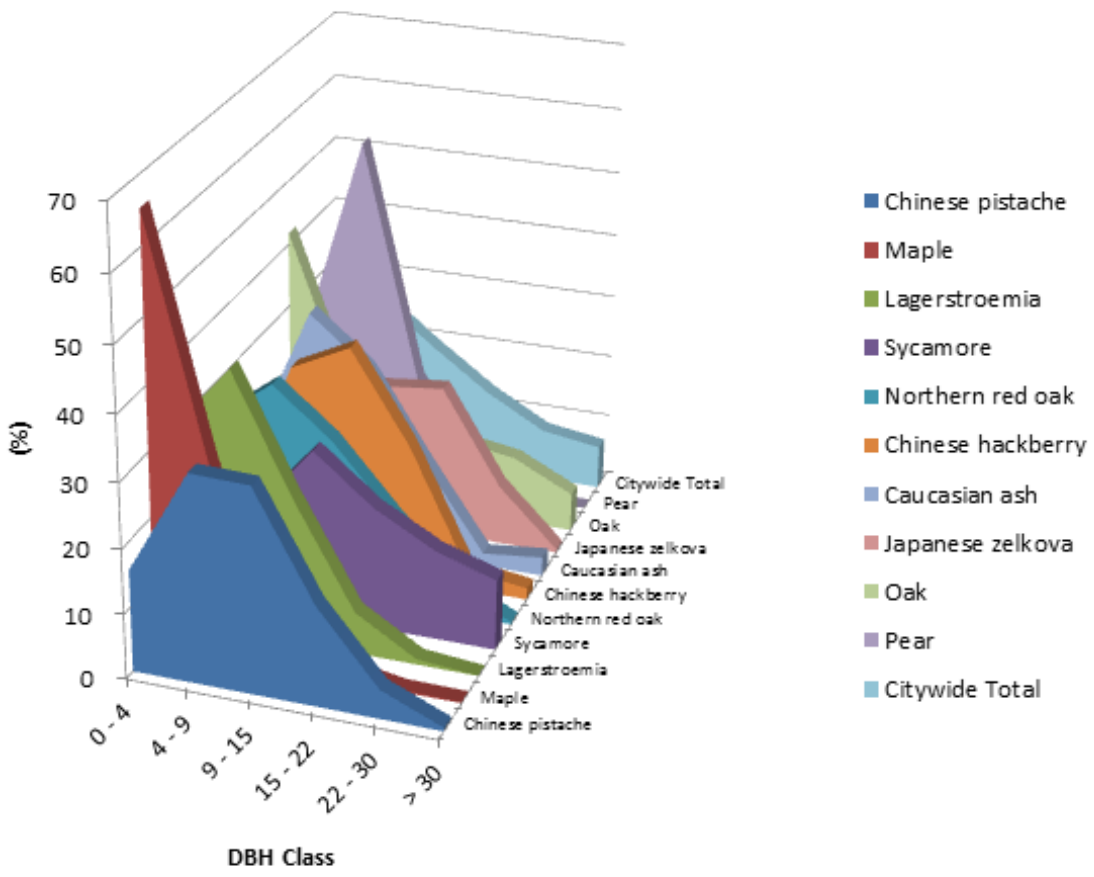
6/8/2015

Species	DBH Class (in) 0-4	4-9	9-15	15-22	22-30	> 30	Total Standard Error
Interior live oak	3	1	0	0	0	0	4 (±0)
Total	**6**	**3**	**1**	**12**	**7**	**19**	**48 (±0)**
Broadleaf Evergreen Medium (BEM)							
Camphor tree	2	11	11	16	19	24	83 (±0)
Olive	0	1	6	15	11	4	37 (±0)
Magnolia	1	1	2	3	1	3	11 (±0)
Laurel de olor	0	0	6	3	0	0	9 (±0)
Total	**3**	**13**	**25**	**37**	**31**	**31**	**140 (±0)**
Broadleaf Evergreen Small (BES)							
Dogwood	9	4	2	1	0	0	16 (±0)
Orange	2	4	1	3	0	0	10 (±0)
Flowering dogwood	0	1	0	0	0	0	1 (±0)
Mandarin lime	0	0	1	0	0	0	1 (±0)
Total	**11**	**9**	**4**	**4**	**0**	**0**	**28 (±0)**
Conifer Evergreen Large (CEL)							
Deodar cedar	2	15	5	7	15	30	74 (±0)
Digger pine	1	3	7	7	15	21	54 (±0)
Pine	3	3	8	12	7	4	37 (±0)
Cedar	2	17	3	6	0	0	28 (±0)
Redwood	0	5	2	6	7	7	27 (±0)
Bald cypress	0	0	1	3	0	0	4 (±0)
Northern white cedar	0	1	0	0	0	0	1 (±0)
Total	**8**	**44**	**26**	**41**	**44**	**62**	**225 (±0)**
Palm Evergreen Large (PEL)							
Arecastrum palm	0	0	6	1	56	49	112 (±0)
Date palm	0	0	0	0	1	3	4 (±0)
Total	**0**	**0**	**6**	**1**	**57**	**52**	**116 (±0)**
Palm Evergreen Small (PES)							
Fan palm	1	0	0	0	1	8	10 (±0)
Total	**1**	**0**	**0**	**0**	**1**	**8**	**10 (±0)**
Grand Total	**1,327**	**1,364**	**1,005**	**677**	**419**	**351**	**5,147 (±0)**

Oroville

Relative Age Distribution of Top 10 Public Tree Species for All Zones (%)

6/8/2015



	DBH class (in)					
Species	0-4	4-9	9-15	15-22	22-30	> 30
Chinese pistache	15.80	32.02	31.74	15.40	4.50	0.54
Maple	65.37	29.31	2.87	2.01	0.29	0.14
Lagerstroemia	29.78	40.61	22.34	6.43	0.85	0.00
Sycamore	14.22	15.64	26.30	18.96	13.98	10.90
Northern red oak	24.73	31.64	24.36	14.18	4.73	0.36
Chinese hackberry	7.17	30.94	35.43	21.52	3.14	1.79
Caucasian ash	14.93	36.32	28.86	14.93	1.99	2.99
Japanese zelkova	20.21	22.80	22.80	23.83	9.33	0.52
Oak	41.79	17.91	11.94	11.94	10.45	5.97
Pear	23.97	54.55	17.36	4.13	0.00	0.00
Citywide Total	25.78	26.50	19.53	13.15	8.14	6.82

Oroville

Site Type of All Trees by Zone

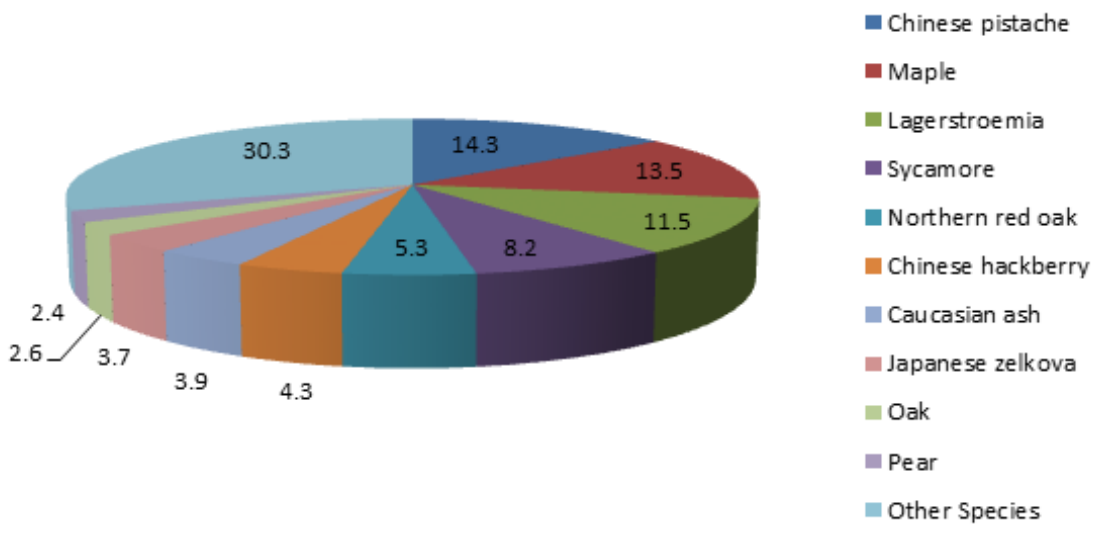
6/8/2015

Zone	Site Type	Tree Count	Standard Error	% of Zone	% of All Trees
1	Behind Sidewalk	795	(N/A)	15.45	15.45
	Open Space	565	(N/A)	10.98	10.98
	Park Strip	2,168	(N/A)	42.12	42.12
	Park Tree	284	(N/A)	5.52	5.52
	Parking Lot	18	(N/A)	0.35	0.35
	Subdivision	97	(N/A)	1.88	1.88
	Tree Well	1,214	(N/A)	23.59	23.59
	Total	5,141	(N/A)	99.88	99.88
Citywide	Behind Sidewalk	795	(N/A)	15.45	15.45
	Open Space	565	(N/A)	10.98	10.98
	Park Strip	2,168	(N/A)	42.12	42.12
	Park Tree	284	(N/A)	5.52	5.52
	Parking Lot	18	(N/A)	0.35	0.35
	Subdivision	97	(N/A)	1.88	1.88
	Tree Well	1,214	(N/A)	23.59	23.59
	Total	5,141	(N/A)	99.88	99.88

Oroville

Species Distribution of Public Trees

6/8/2015



Species	Percent
Chinese pistache	14.3
Maple	13.5
Lagerstroemia	11.5
Sycamore	8.2
Northern red oak	5.3
Chinese hackberry	4.3
Caucasian ash	3.9
Japanese zelkova	3.7
Oak	2.6
Pear	2.4
Other Species	30.3
Total	100.0

Oroville

Importance Values of Public Trees

6/8/2015

Species	Number of Trees	% of Total Trees	Leaf Area (ft²)	% of Total Leaf Area	Canopy Cover (ft²)	% of Total Canopy Cover	Importance Value
Chinese pistache	734	14.27	2,096,467	14.89	556,848	15.00	14.72
Maple	696	13.53	410,717	2.92	148,568	4.00	6.82
Lagerstroemia	591	11.49	607,669	4.32	210,351	5.67	7.16
Sycamore	422	8.21	1,934,507	13.74	513,969	13.84	11.93
Northern red oak	275	5.35	365,802	2.60	121,772	3.28	3.74
Chinese hackberry	223	4.34	615,900	4.38	180,601	4.86	4.53
Caucasian ash	201	3.91	304,148	2.16	107,017	2.88	2.98
Japanese zelkova	192	3.73	595,663	4.23	182,557	4.92	4.29
Oak	134	2.61	306,171	2.18	75,205	2.03	2.27
Pear	121	2.35	112,922	0.80	39,012	1.05	1.40
Arecastrum palm	112	2.18	127,282	0.90	122,207	3.29	2.12
Tulip tree	89	1.73	186,876	1.33	33,837	0.91	1.32
American elm	87	1.69	958,053	6.81	231,540	6.24	4.91
Camphor tree	83	1.61	1,096,961	7.79	115,731	3.12	4.17
Deodar cedar	74	1.44	356,001	2.53	115,584	3.11	2.36
Chinese elm	65	1.26	536,420	3.81	114,314	3.08	2.72
White ash	64	1.24	16,726	0.12	3,370	0.09	0.48
Ginkgo	60	1.17	102,748	0.73	12,033	0.32	0.74
Sweet gum	58	1.13	314,455	2.23	84,928	2.29	1.88
Sweetgum	55	1.07	149,015	1.06	22,274	0.60	0.91
Digger pine	54	1.05	277,205	1.97	88,064	2.37	1.80
Velvet ash	54	1.05	226,323	1.61	70,234	1.89	1.52
Locust	44	0.86	245,561	1.74	51,711	1.39	1.33
Red maple	38	0.74	25,849	0.18	10,193	0.27	0.40
Olive	37	0.72	289,179	2.05	46,417	1.25	1.34
Pine	37	0.72	122,352	0.87	33,418	0.90	0.83
Hickory	36	0.70	112,150	0.80	38,494	1.04	0.84
Gum	36	0.70	357,235	2.54	67,119	1.81	1.68
Plum	33	0.64	11,727	0.08	4,076	0.11	0.28
Redbud	32	0.62	6,518	0.05	2,334	0.06	0.24
Milktree	29	0.56	66,535	0.47	23,357	0.63	0.56
Cedar	28	0.54	40,650	0.29	9,222	0.25	0.36
Redwood	27	0.52	116,474	0.83	35,233	0.95	0.77
Elm	26	0.51	242,958	1.73	39,629	1.07	1.10
Pin oak	23	0.45	17,312	0.12	6,422	0.17	0.25
Basswood	23	0.45	19,420	0.14	6,582	0.18	0.25
London planetree	22	0.43	76,917	0.55	26,400	0.71	0.56
Silver maple	20	0.39	231,960	1.65	44,116	1.19	1.07
California sycamore	19	0.37	52,957	0.38	16,106	0.43	0.39
Northern hackberry	18	0.35	68,227	0.48	18,476	0.50	0.44
Chinese flame tree	17	0.33	6,762	0.05	1,741	0.05	0.14
Dogwood	16	0.31	11,396	0.08	3,932	0.11	0.17
Callery pear	15	0.29	15,449	0.11	5,155	0.14	0.18
Magnolia	11	0.21	24,255	0.17	6,755	0.18	0.19
Orange	10	0.19	13,465	0.10	5,063	0.14	0.14
Fan palm	10	0.19	3,648	0.03	1,952	0.05	0.09
Cherry plum	10	0.19	4,079	0.03	1,352	0.04	0.09
Laurel de olor	9	0.17	17,267	0.12	6,470	0.17	0.16
Mulberry	8	0.16	20,088	0.14	6,829	0.18	0.16
Ash	8	0.16	12,631	0.09	4,320	0.12	0.12
Roble negro	8	0.16	13,064	0.09	4,535	0.12	0.12
Ailanthus	4	0.08	10,013	0.07	3,592	0.10	0.08
Bald cypress	4	0.08	11,686	0.08	2,675	0.07	0.08
Date palm	4	0.08	4,546	0.03	4,418	0.12	0.08
Interior live oak	4	0.08	862	0.01	248	0.01	0.03
Littleleaf linden	4	0.08	3,241	0.02	1,114	0.03	0.04

Importance Values of Public Trees

6/8/2015

Species	Number of Trees	% of Total Trees	Leaf Area (ft²)	% of Total Leaf Area	Canopy Cover (ft²)	% of Total Canopy Cover	Importance Value
Diospyros	4	0.08	2,650	0.02	873	0.02	0.04
Cottonwood	3	0.06	7,401	0.05	2,272	0.06	0.06
Japanese maple	3	0.06	5,678	0.04	2,383	0.06	0.05
Willow	3	0.06	1,840	0.01	595	0.02	0.03
Birch	2	0.04	439	0.00	76	0.00	0.01
Honeylocust	2	0.04	1,224	0.01	663	0.02	0.02
Walnut	2	0.04	23,656	0.17	5,650	0.15	0.12
Mandarin lime	1	0.02	1,626	0.01	653	0.02	0.02
Black locust	1	0.02	38,519	0.27	3,831	0.10	0.13
Alder	1	0.02	1,753	0.01	660	0.02	0.02
Flowering dogwood	1	0.02	825	0.01	277	0.01	0.01
Northern white cedar	1	0.02	884	0.01	195	0.01	0.01
Pistache	1	0.02	810	0.01	279	0.01	0.01
Hackberry	1	0.02	2,412	0.02	768	0.02	0.02
Common fig	1	0.02	852	0.01	260	0.01	0.01
Baldcypress	1	0.02	7,995	0.06	2,882	0.08	0.05
Locust	1	0.02	3,254	0.02	1,136	0.03	0.02
Total	5,143	100.00	14,076,286	100.00	3,712,926	100.00	100.00

Oroville

Land Use of Public Trees by Zone

6/8/2015

Zone	Land Use	Tree Count	Standard Error	% of Zone	% of Public Trees
1	Residential	3,196	(N/A)	62.09	62.24
	Commercial	621	(N/A)	12.07	12.09
	Industrial	137	(N/A)	2.66	2.67
	Public Park/Open Space	1,181	(N/A)	22.95	23.00
	Total	5,135	(N/A)	99.77	100.00
Citywide	Residential	3,196	(N/A)	62.24	62.24
	Commercial	621	(N/A)	12.09	12.09
	Industrial	137	(N/A)	2.67	2.67
	Public Park/Open Space	1,181	(N/A)	23.00	23.00
	Total	5,135	(N/A)	100.00	100.00

Oroville

Complete Population of Public Trees

6/8/2015

Species	DBH Class (in) 0-4	4-9	9-15	15-22	22-30	> 30	Total Standard Error
Broadleaf Deciduous Large (BDL)							
Sycamore	60	66	111	80	59	46	422 (±0)
Northern red oak	68	87	67	39	13	1	275 (±0)
Chinese hackberry	16	69	79	48	7	4	223 (±0)
Oak	56	24	16	16	14	8	134 (±0)
Tulip tree	8	41	22	14	4	0	89 (±0)
American elm	0	0	3	6	39	39	87 (±0)
Chinese elm	5	3	8	16	30	3	65 (±0)
White ash	64	0	0	0	0	0	64 (±0)
Sweet gum	1	7	15	21	6	8	58 (±0)
Sweetgum	3	34	4	9	4	1	55 (±0)
Velvet ash	0	0	8	22	15	9	54 (±0)
Locust	1	11	20	4	4	4	44 (±0)
Elm	3	3	8	3	2	7	26 (±0)
London planetree	0	3	5	10	3	1	25 (±0)
Pin oak	11	4	6	2	0	0	23 (±0)
Silver maple	1	0	2	3	1	13	20 (±0)
California sycamore	1	3	11	3	1	0	19 (±0)
Northern hackberry	2	2	9	3	0	2	18 (±0)
Cottonwood	1	0	1	1	0	0	3 (±0)
Walnut	0	0	0	0	1	1	2 (±0)
Honeylocust	0	2	0	0	0	0	2 (±0)
Baldcypress	0	0	0	0	0	1	1 (±0)
Hackberry	0	0	1	0	0	0	1 (±0)
Total	**301**	**359**	**396**	**300**	**203**	**148**	**1,710 (±0)**
Broadleaf Deciduous Medium (BDM)							
Chinese pistache	116	235	233	113	33	4	734 (±0)
Maple	455	204	20	14	2	1	696 (±0)
Lagerstroemia	176	240	132	38	5	0	591 (±0)
Caucasian ash	30	73	58	30	4	6	201 (±0)
Japanese zelkova	39	44	44	46	18	1	193 (±0)
Pear	29	66	21	5	0	0	121 (±0)
Ginkgo	46	2	3	3	3	3	60 (±0)
Red maple	19	15	4	0	0	0	38 (±0)
Hickory	2	1	6	8	5	14	36 (±0)
Milktree	1	7	6	13	2	0	29 (±0)
Basswood	6	14	2	1	0	0	23 (±0)
Chinese flame tree	16	0	0	1	0	0	17 (±0)
Callery pear	7	4	2	1	1	0	15 (±0)
Mulberry	1	2	0	2	3	0	8 (±0)
Ash	2	3	0	3	0	0	8 (±0)
Ailanthus	0	0	2	2	0	0	4 (±0)
Diospyros	1	3	0	0	0	0	4 (±0)
Littleleaf linden	0	4	0	0	0	0	4 (±0)
Willow	1	2	0	0	0	0	3 (±0)
Birch	2	0	0	0	0	0	2 (±0)
Black locust	0	0	0	0	0	1	1 (±0)
Alder	0	0	1	0	0	0	1 (±0)
Pistache	0	1	0	0	0	0	1 (±0)
Locust	0	0	0	1	0	0	1 (±0)
Total	**949**	**920**	**534**	**281**	**76**	**30**	**2,791 (±0)**
Broadleaf Deciduous Small (BDS)							
Plum	16	13	3	1	0	0	33 (±0)
Redbud	27	1	4	0	0	0	32 (±0)
Cherry plum	5	2	3	0	0	0	10 (±0)
Japanese maple	0	0	3	0	0	0	3 (±0)
Common fig	0	0	0	0	0	1	1 (±0)
Total	**48**	**16**	**13**	**1**	**0**	**1**	**79 (±0)**
Broadleaf Evergreen Large (BEL)							
Gum	0	1	1	8	7	19	36 (±0)
Roble negro	3	1	0	4	0	0	8 (±0)

Complete Population of Public Trees

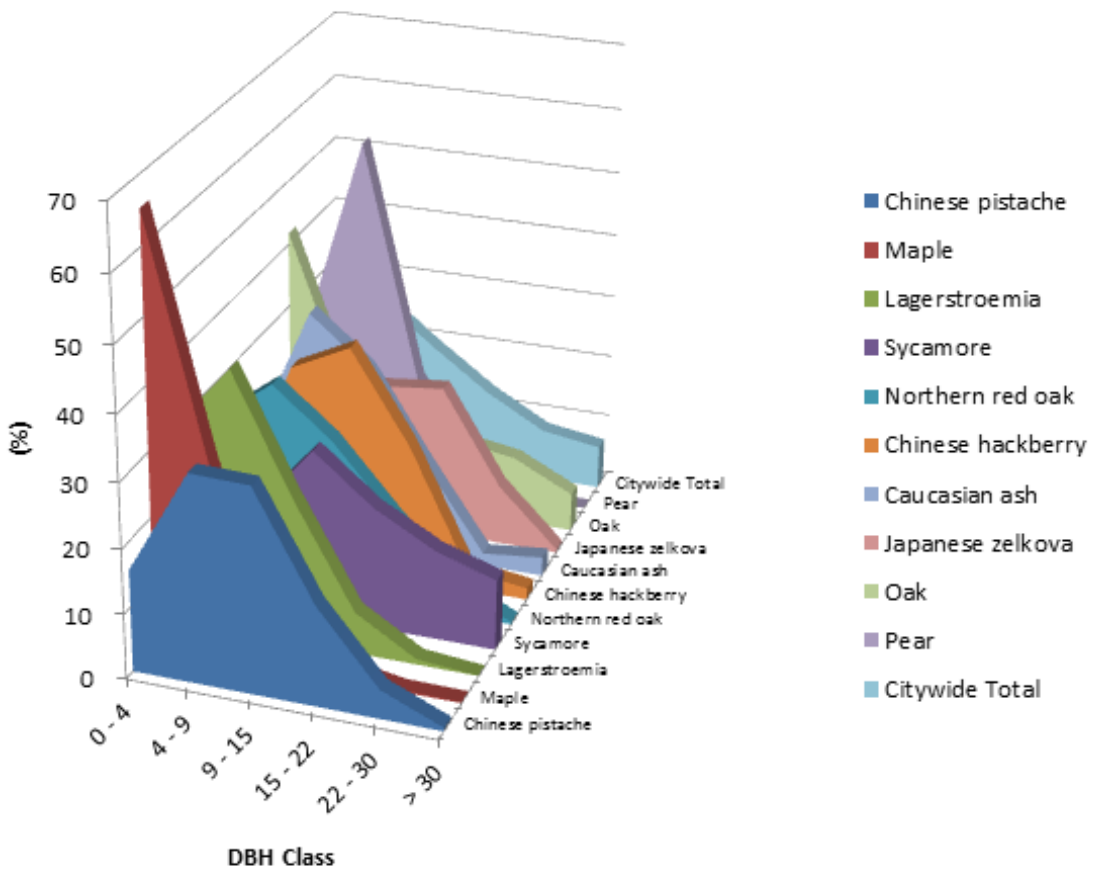
6/8/2015

Species	DBH Class (in) 0-4	4-9	9-15	15-22	22-30	> 30	Total Standard Error
Interior live oak	3	1	0	0	0	0	4 (±0)
Total	**6**	**3**	**1**	**12**	**7**	**19**	**48 (±0)**
Broadleaf Evergreen Medium (BEM)							
Camphor tree	2	11	11	16	19	24	83 (±0)
Olive	0	1	6	15	11	4	37 (±0)
Magnolia	1	1	2	3	1	3	11 (±0)
Laurel de olor	0	0	6	3	0	0	9 (±0)
Total	**3**	**13**	**25**	**37**	**31**	**31**	**140 (±0)**
Broadleaf Evergreen Small (BES)							
Dogwood	9	4	2	1	0	0	16 (±0)
Orange	2	4	1	3	0	0	10 (±0)
Flowering dogwood	0	1	0	0	0	0	1 (±0)
Mandarin lime	0	0	1	0	0	0	1 (±0)
Total	**11**	**9**	**4**	**4**	**0**	**0**	**28 (±0)**
Conifer Evergreen Large (CEL)							
Deodar cedar	2	15	5	7	15	30	74 (±0)
Digger pine	1	3	7	7	15	21	54 (±0)
Pine	3	3	8	12	7	4	37 (±0)
Cedar	2	17	3	6	0	0	28 (±0)
Redwood	0	5	2	6	7	7	27 (±0)
Bald cypress	0	0	1	3	0	0	4 (±0)
Northern white cedar	0	1	0	0	0	0	1 (±0)
Total	**8**	**44**	**26**	**41**	**44**	**62**	**225 (±0)**
Palm Evergreen Large (PEL)							
Arecastrum palm	0	0	6	1	56	49	112 (±0)
Date palm	0	0	0	0	1	3	4 (±0)
Total	**0**	**0**	**6**	**1**	**57**	**52**	**116 (±0)**
Palm Evergreen Small (PES)							
Fan palm	1	0	0	0	1	8	10 (±0)
Total	**1**	**0**	**0**	**0**	**1**	**8**	**10 (±0)**
Grand Total	**1,327**	**1,364**	**1,005**	**677**	**419**	**351**	**5,147 (±0)**

Oroville

Relative Age Distribution of Top 10 Public Tree Species for All Zones (%)

6/8/2015



	DBH class (in)					
Species	0-4	4-9	9-15	15-22	22-30	> 30
Chinese pistache	15.80	32.02	31.74	15.40	4.50	0.54
Maple	65.37	29.31	2.87	2.01	0.29	0.14
Lagerstroemia	29.78	40.61	22.34	6.43	0.85	0.00
Sycamore	14.22	15.64	26.30	18.96	13.98	10.90
Northern red oak	24.73	31.64	24.36	14.18	4.73	0.36
Chinese hackberry	7.17	30.94	35.43	21.52	3.14	1.79
Caucasian ash	14.93	36.32	28.86	14.93	1.99	2.99
Japanese zelkova	20.21	22.80	22.80	23.83	9.33	0.52
Oak	41.79	17.91	11.94	11.94	10.45	5.97
Pear	23.97	54.55	17.36	4.13	0.00	0.00
Citywide Total	25.78	26.50	19.53	13.15	8.14	6.82

Oroville

Site Type of All Trees by Zone

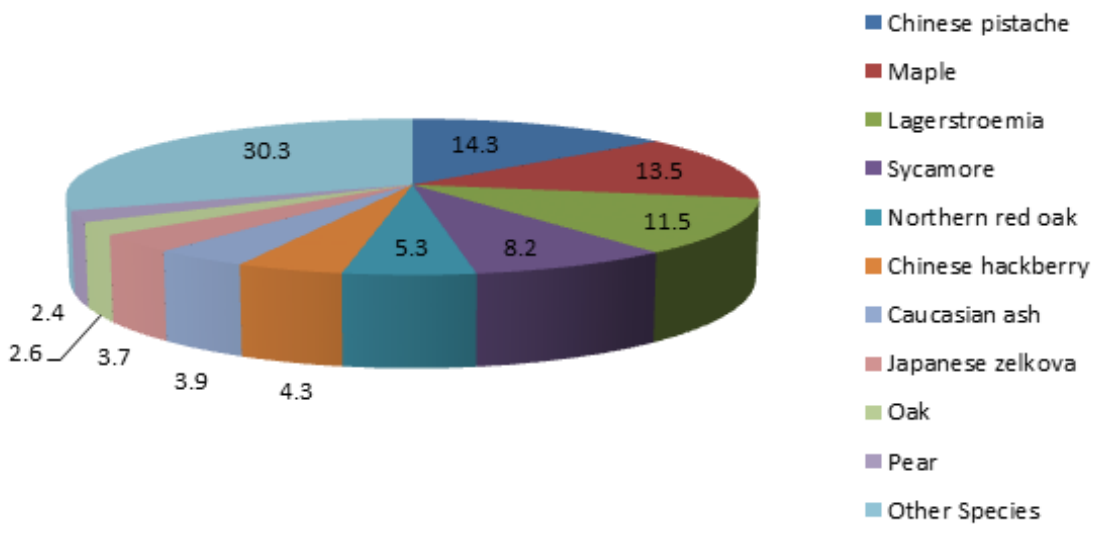
6/8/2015

Zone	Site Type	Tree Count	Standard Error	% of Zone	% of All Trees
1	Behind Sidewalk	795	(N/A)	15.45	15.45
	Open Space	565	(N/A)	10.98	10.98
	Park Strip	2,168	(N/A)	42.12	42.12
	Park Tree	284	(N/A)	5.52	5.52
	Parking Lot	18	(N/A)	0.35	0.35
	Subdivision	97	(N/A)	1.88	1.88
	Tree Well	1,214	(N/A)	23.59	23.59
	Total	5,141	(N/A)	99.88	99.88
Citywide	Behind Sidewalk	795	(N/A)	15.45	15.45
	Open Space	565	(N/A)	10.98	10.98
	Park Strip	2,168	(N/A)	42.12	42.12
	Park Tree	284	(N/A)	5.52	5.52
	Parking Lot	18	(N/A)	0.35	0.35
	Subdivision	97	(N/A)	1.88	1.88
	Tree Well	1,214	(N/A)	23.59	23.59
	Total	5,141	(N/A)	99.88	99.88

Oroville

Species Distribution of Public Trees

6/8/2015



Species	Percent
Chinese pistache	14.3
Maple	13.5
Lagerstroemia	11.5
Sycamore	8.2
Northern red oak	5.3
Chinese hackberry	4.3
Caucasian ash	3.9
Japanese zelkova	3.7
Oak	2.6
Pear	2.4
Other Species	30.3
Total	100.0

appendix d

PLANT PALETTE

TREES

		DESCRIPTION						PLANTING & MAINTENANCE					SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS					
Scientific Name	Common Name	Evergreen (E) or Deciduous (D)	Height (Feet)	Spread (Feet)	Shape: Round (R), Pyramidal (P), Broad (B), Oval (O)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Life Span (Years)	Tree Well Minimum (Feet)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs: Low (L), Moderate (M)	CA Native			Freeway Buffer (high air quality improvements)	Street Corridors	Good for Use Under Utility Lines	Civic/Parks/Schools	Bioretention/Stormwater	High Heat Exposure
Aesculus californica	California buckeye	D	10-20	30	R	S-M	30-60	4-8	VL	FS to PS	M	●	prefers well-drained	cream colored bloom; attractive branching; loses all its leaves in summer; seeds are toxic				●	●	●
Arbutus unedo	strawberry tree	E	20-25	15-35	R	S	50-60	4	L	FS to PS	M		clay-tolerant; acid to neutral soil	trunks and large branches of mature trees become twisted and gnarled in appearance; can be messy			●	●	●	●
Arbutus menziesii	madrone	E	20-100	20-40	R	F	50-60	4-8	L	FS	M	●	clay-tolerant; well-drained and lime-free	attractive, smooth, reddish-brown bark that peels in thin flakes; use multi-trunk when possible; pink fall flowers			●	●		●
Cedrus atlantica 'Aurea'	atlas cedar	E	>60	30	P	S-M	60+	6-8	M	FS	L		deep well-drained	conifer; yellowish needles; less spreading than other cedars				●		●
Cedrus deodara	Deodar cedar	E	80	40	P	F	60+	6-8	L/M	FS	L		tolerates most soils	large accent tree				●		●
Celtis reticulata	western hackberry	D	30-60	30-60	R	M	30-60	4-8	L	FS to PS	L	●	tolerates poor soils			●		●	●	●
Cercis occidentalis	western redbud	D	10-18	10-18	R	S	25	4	L	FS	M	●	clay-tolerant; adaptable	use multi-trunk where possible; short lived; brilliant magenta pea-shaped flowers in early spring followed by lovely heart-shaped leaves that turn red and orange in the fall			●		●	
Chilopsis linearis	desert willow	D	15-30	10-20	R	F	30-60	4	VL	FS	M		well-drained	grows fast at first then slows with age			●			●
Ginkgo biloba 'Autumn Gold'	autumn gold maidenhair tree	D	40	30	O	S	60+	4-6	M	FS to PS	L		clay-tolerant	low, early pruning; train prune longer due to slow growth; long lived		●		●		●
Ginkgo biloba 'Fairmount'	fairmount maidenhair tree	D	50	20	P	F	60+	4-6	M	FS to PS	L		clay-tolerant	faster growing than other Ginkgo; erect pyramidal form; long lived		●		●		●
Gleditsia triacanthos (thornless cultivars)	honey locust	D	35-70	25-35	R	F	30-60	4-6	L	FS			prefers loam, adaptable	roots will upheave sidewalk; susceptible to wind damage in exposed areas; spec thornless cultivars: 'Moraine' and 'Sunburst'				●		
Koelreuteria paniculata 'Fastigiata'	goldenrain tree	D	20-25	20-25	R	S	30-60	4-6	M	FS			adaptable	yellow bloom; upright habit		●	●			●
Lagerstroemia indica (cultivars)	crape myrtle	D	15-25	8 to 15	R	S	30-60	4	L	FS	M		tolerates most soils; well-drained	attractive peeling cinnamon bark, excellent winter feature; spec cultivars: 'Muskogee', 'Natchez', 'Osage', 'Tuscarora'			●			●
Liquidambar spp.	sweet gum	D	20-60	20-30	O	M	60+		M	FS to PS	L		adaptable	drops seed pods; use as an accent only for fall color in appropriate hydrozones; not good in streetscapes, but a good freeway buffer	●			●		
Olea europaea 'Swan Hill'	Swan Hill fruitless olive	E	25-30	25-30	R	S	60+		VL	FS	M		adaptable	little to no pollen; fruitless; need to prune base suckers; long lived			●	●		●
Pinus canariensis	Canary Island pine	E	50-80	20-35	O	F	30-60	4-8	L	FS	L		adaptable	conifer; reddish bark; vertical form		●		●		
Pinus sabiniana	grey pine	E	60-80	20-40	P	F	30-60	4-8	VL	FS	L		tolerates dry acidic	gray pine has been planted on a limited basis for erosion control; good park, habitat, and open space tree				●		●

TREES (continued)

		DESCRIPTION						PLANTING & MAINTENANCE					SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS					
Scientific Name	Common Name	Evergreen (E) or Deciduous (D)	Height (Feet)	Spread (Feet)	Shape: Round (R), Pyramidal (P), Broad (B), Oval (O)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Life Span (Years)	Tree Well Minimum (Feet)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs: Low (L), Moderate (M)	CA Native			Freeway Buffer (high air quality improvements)	Street Corridors	Good for Use Under Utility Lines	Civic/Parks/Schools	Bioretention/Stormwater	High Heat Exposure
Pistachia chinensis 'Keith Davey'	Chinese pistache	D	25-30	25-30	R	M	30-60	4-6	L	FS to PS	M		adaptable	good under utilities; pruning required; 'Keith Davey' has no berries; not good within street corridors		●	●	●		●
Platanus racemosa	California sycamore	D	30-80	20-50	B	M	60+		M	FS	L	●	well-drained	use sparingly; protected species, which creates pruning challenges; heavy seasonal pollen droppings; high VOC absorption/ CO2 sequestration; long lived	●			●	●	●
Platanus x acerifolia 'Bloodgood'	Bloodgood London plane tree	D	70-100	60	B	M/F	60+	6-8	L/M	FS	M		prefers deep, rich, moist, well-drained soils	withstands high pH, and pollution and grime of cities		●		●	●	
Platanus x acerifolia 'Liberty'	Liberty London plane tree	D	70-100	70	B	M/F	60+	6-8	L/M	FS	M		tolerates most soils	allergy concern; long lived; mildew resistent		●		●	●	
Platanus x acerifolia 'Yarwood'	Yarwood London plane tree	D	40-80	30-40	B	M/F	60+	6-8	L/M	FS	M		tolerates most soils	allergy concern; long lived; mildew resistent; 'Yarwood' foliage holds up better than most plane trees in late summer; yellow fall color		●		●	●	
Pyrus calleryana 'Chanticleer'	Chanticleer pear	D	35-40	15-20	O	F	30-60	4-6	M	FS	M		adaptable	white bloom; orange to reddish purple fall color		●		●		
Quercus agrifolia	coast live oak	E	20-70	70	O	M	60+		VL	FS	L	●	prefers a deep loam	long-lived; attractive bark; attracts birds and butterflies; deer resistant; drought resiliant		●		●		●
Quercus chrysolepis	canyon live oak	E	30-60	30-60	B	S	60+		L	FS	L	●	well-drained	protect from intense sun				●		
Quercus coccinea	scarlet oak		70-80	40-50	R	M	60+	4-6	L/M	FS	L		prefers dry, acidic, sandy soils	foliage is a glossy green in summer turning to scarlet in fall		●		●	●	●
Quercus douglasii	blue oak	D	25-50	25-50	B	S	60+		VL	FS	L	●	prefers dry soil, well-drained	provides shade and an aesthetic quality; good for naturalizing landscapes				●		●
Quercus ilex	holly oak	E	30-60	30-60	R	S	30-60	4-6	L	FS	L		adaptable	tolerates water		●		●	●	
Quercus lobata	valley oak	D	50-70	50-70	R	M	60+		L	FS	L	●	well-drained	fastest growing of recommended oaks; long-lived; tolerates seasonal flooding				●		●
Quercus suber	cork oak	E	40-70	35-40	R	M	60	4-8	L	FS	L		acidic, dry to medium, well-drained loams	high VOC absorption and CO2 sequestration; long lived; ornamental cork bark	●			●	●	●
Quercus wislizenii	interior live oak	E	25-40	25-40	O	F	60		VL	FS	L	●	dry, well-drained, loams, clay and gravelly loams	attractive bark; birds and butterflies; deer resistant; very tough, adaptable tree				●	●	●
Robinia x ambigua 'Purple Robe'	purple robe locust	D	30-35	20-25	O	F	30-60	4-8	L	FS	M					●		●		●
Ulmus parvifolia 'Frontier'	frontier elm	D	40	30	O	M	30-60	4-8	L/M	FS to PS	L	●	tolerates most soils	weeping form; resistant to Dutch Elm disease and urban conditions; long-lasting red-purple color in fall				●		

SHRUBS

Scientific Name	Common Name	DESCRIPTION: Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	PLANTING & MAINTENANCE: Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native	SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS: Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Adenostoma fasciculatum	chamise		2-10	10	M	M	L	FS	L	●	tolerants most soils					●	●
Aloe spp.	aloe	orange	varies		U	M	L	FS to PS	L	●	well-drained					●	
Anigozanthus spp.	kangaroo paw	red, purple, green, yellow	up to 2	up to 3	U	F	L	FS	L		well-drained	attracts hummingbirds	●	●		●	●
Arctostaphylos densiflora 'McMinn'	mazanita 'McMinn'	white	5-6	7	M	M	L	FS to PS	L	●	decomposed granite, sand	fine textured bright green foliage and red bark				●	●
Arctostaphylos hookeri	Hooker's manzanita	white	2-8	3-12	S	M	L	FS to PS	L	●	well-drained					●	●
Arctostaphylos manzanita	common manzanita	white	6-20	4-10	S	M	L	FS to PS	L	●	well-drained	crooked branching habit; purplish-red bark; small shiny leaves				●	●
Berberis thunbergii var. atropurpurea *'Nana'*	crimson pygmy Japanese barberry		4-6	4-6	R	M	L	PS	L		adaptable	bronzy red to purple red foliage; has thorns		●			
Callistemon viminalis 'Little John'	dwarf bottlebrush	blood red	3-4	4-8	R	M	L/M	FS	L		clay-tolerant	can be pruned up to small trees; heat tolerant	●	●			●
Carpenteria californica	bush anemone	white	3-8	6-8	U	M	L	PS	M		adaptable	delicate, lightly-scented white flowers and shiny evergreen foliage; excellent shrub for light shade	●			●	
Ceanothus spp.	mountain lilac	blue	varies			F	L	S	L	●	well-drained	Dark Star', 'Ray Hartman', 'Snow Flurry'	●			●	●
Ceanothus 'Concha'	Concha ceanothus	cobalt	5-6	6	U	F	L/M	FS	M	●	adaptable	showy cobalt blue flowers; a great bloomer and looks good all year	●			●	●
Cercocarpus betuloides	mountain mahogany	yellow	5-12	5-12	U	S	VL	FS	L	●	adaptable; tolerates clay and serpentine	open habit; looks nice with oaks		●		●	●
Chaenomeles japonica	flowering quince	white, pink, orange, red	up to 3	up to 6	S	L	L	FS	M		clay-tolerant; adaptable	use as accents; avoid varieties with thorns; beautiful spreading shrub with fiery red, apple-blossum-like flowers that preced leaves each spring		●	●		
Cistus purpureus	orchid spot rockrose	rose-purple	4	4-6	R	L	L	FS	M		adaptable	neat, compact shrub with showy rose-purple blooms with maroon spots	●	●			●
Cistus hybridus	rockrose	white	2-4	4-5	R	L	L	FS	M		adaptable	evergreen with bight white flowers with thin green branches	●	●			●
Cistus ladanifer	crimson-spot rockrose	white with crimson spot	3-5	3-5	R	L	L	FS	M		clay-tolerant	white flowers with red dot	●	●		●	●
Coprosma 'Evening Glow'	Evening Glow mirror plant		4-5	4-5	U	M	L	FS	L		adaptable	glossy gree leaves with gold; turns orange red in fall and winter	●	●			●

SHRUBS (continued)

		DESCRIPTION					PLANTING & MAINTENANCE				SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS				
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native			Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Cotinus coggygria	smoke tree	purple	12-15	up to 15	U	M	L	FS	L		well-drained, clay-tolerant	small tree/large shrub; flowers form smoke-like look around the plant; slow growing	●	●			●
Dendromecon rigida	bush poppy	yellow	4-8	4-6	U	M	VL	FS	M	●	clay-tolerant; well-draining	large shrub/small tree; large poppy-like flowers; prune back to 2ft after bloom		●		●	●
Dietes iridioides	fortnight lily	pale yellow; light blue; white	2-3	2-3	U	M	L	FS	L		clay-tolerant	use as accent or massing, orchid-like flowers	●	●			
Epilobium canum	California fuchsia	orange	varies	1.5-3	S	F	L	FS	L	●	well-drained	gray foliage; showy summer flowers; height varies by cultivar	●	●	●		●
Euryops pectinatus 'Viridis'	shrub daisy	yellow	3-5	3-5	R	F	L	FS	L		well-drained	use as an accent; insectary plant		●	●	●	●
Garrya elliptica	silk tassel	white	10-20	10-20	R	M	L	PS	L	●	well-drained	interesting flowers hang in tassels; large shrub/small tree; allergen level: 7(male)/1(female)		●		●	
Grevillea spp.	grevillea		varies			M	L	FS to PS	L		tolerant of poor soils	very heat tolerant; attracts hummingbirds	●	●			●
Hesperaloe parviflora	red yucca	red, yellow	3-4	3-4	U	M	L	FS	L		well-drained	attracts hummingbirds; succulent/cacti; heat tolerant; locate away from pedestrians	●	●			●
Heteromeles arbutifolia	toyon	white	6-15	15-20	R	F	VL	PS	M	●	adaptable	large shrub/small tree; red berries; green leaves with white flowers and red "berry" like flowers; sharp blades; takes pruning well, but flowers only on second year growth		●		●	●
Iris spp.	bearded iris	varies	0.75-4	1-2	U		L	FS	L	M	well-drained, clay-tolerant	numerous hybrids; use as an accent; will tolerate shade in hot areas		●			●
Juniperus sabina	savin juniper		1-1.5	5-10	S	M	L	FS to PS	M		well-drained; adaptable	semi vase-shaped form with a somewhat spreading habit	●	●			●
Lagerstroemia indica x fauriei 'Indian Tribes'	crape myrtle	varies	10	10	R	M	L	FS	M		adaptable	large shrub with smooth, dark cinnamon-brown exfoliating bark; glossy dark green leaves turn vibrant orange-red in fall; size varies with cultivars	●	●			●
Lantana camara	common lantana	yellow, orange, red	2-3	up to 6	S	F	L	FS	L		adaptable	prune back in spring to prevent woodiness	●	●			●
Lantana camara 'American Red'	lantana	red with yellow center	4-6	4-6	S	F	L	FS	L		adaptable		●	●			●
Lantana camara 'Christine'	lantana	cherry red	6	5	U	M	L	FS	L		adaptable	striking cherry red flowers	●	●			●
Lavatera maritima	tree mallow	lavender	6-8	10	U	F	L	FS to PS	L		adaptable	long skinny, green branches with lavender-colored flowers; long bloom season		●			●

SHRUBS (continued)

Scientific Name	Common Name	DESCRIPTION: Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	PLANTING & MAINTENANCE: Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native	SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS: Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Leonotis leonurus	lion's tail	orange	4-6	4-6			L	FS	L		well-drained	showy orange flower spikes attract birds and butterflies	●	●		●	●
Leucophyllum frutescens 'Compactum'	Texas ranger	dark pink	5	5	R	M	L	FS	L		well-drained; adaptable	has gray-silver foliage and produces oodles of dark pink flowers	●	●			●
Lonicera interrupta	chaparral honeysuckle		5	3	U	F	L	FS to PS	L		adaptable	twining shrub with yellow honeysuckle flowers					
Mahonia aquifolium 'Compacta'	Oregon grape	yellow	1.5-2	3-4	S	S	L	S	L	●	well-drained	berries attract birds	●	●		●	
Mahonia nevinii	nevin mahonia	yellow	6-10	6-12	U	M	L	FS to PS	M		adaptable; tolerates clay and alkaline	rigid branches covered with gray-blue foliage	●	●		●	
Mimulus aurantiacus	sticky monkey flower	varies	3-4	3-4	M	M	L	FS to PS	L	●	well-drained	well adapted to heat, sun, summer drought		●	●	●	
Mimulus aurantiacus var. puniceus	red monkey flower	red	3-4	3-4	M	M	L	FS to PS	L	●	well-drained			●	●	●	
Myrsine africana	African boxwood		3-8	4	R	M	L	FS	M		adaptable	glossy foliage emerges with red highlights, then matures to green	●	●			●
Myrtus communis 'Compacta'	dwarf myrtle	white	2-3	2-3	R	M	L	PS	L		well-drained	flowers are sweet smelling; make a good low, formal hedge; requires little pruning; bluish black berries		●			
Nandina domestica 'Compacta'	heavenly bamboo		4-5	3	U	M	L	FS	M		adaptable	lacy green leaves on upright cane-like stems turn brilliant red in autumn	●	●			
Nandina domestica 'Harbor Dwarf'	dwarf nandina	pinkish white, creamy white	2-3	2-3	S	M	L	FS to PS	L		adaptable	spreads by rhizomes; makes good groundcover; foliage has an orange-red to bronzy red winter color	●	●			
Narcissus	daffodil	varies	>1	>1	U	F	VL	FS to PS	L		adaptable	numerous hybrids exist for a variety of flower colors; trumpet-like flower; use as an accent; planted by bulbs		●			
Nerium oleander 'Casablanca'	oleander	white	8-10	8-10	M	M	L	FS	M		clay-tolerant; adaptable	poisonous if ingested; do not use in areas where people can come into contact with plant	●				●
Nerium oleander 'Little Red'	dwarf oleander	red pink	3-4	4	M	M	L	FS	M		clay-tolerant; adaptable	poisonous if ingested; do not use in areas where people can come into contact with plant	●				●
Olea europaea 'Little Ollie'	Little Ollie olive		4-6	4-6	C	M	L	FS	M		adaptable	deep green leaves have lighter silvery-green undersides; attractive as a formal clipped hedge or featured as a specimen shrub	●	●			
Penstemon spp.	beard tongue	bright red, blues	>2	1	U	F	L	PS	M		well-drained	variety of color based on species; use as an accent; needs shade in hot climates; short lived; attracts hummingbirds and butterflies		●	●		

SHRUBS (continued)

		DESCRIPTION					PLANTING & MAINTENANCE				SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS				
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native			Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Penstemon heterophyllus	foothill penstemon	reddish purple; deep blue	1.5-2	2-3	S	F	L	PS	M	●	well-drained	luminous almost turquoise flowers; tolerates no water once established		●	●	●	
Phlomis spp.	Jerusalem sage	yellow, purple, lilac	2.5-6	4-6	R	M	L	FS	M		well-drained, clay-tolerant	thick, furry/hairy leaves	●	●			●
Phormium spp.	New Zealand flax		varies		U	M	L	FS to PS	L		clay-tolerant	colorful foliage; size varies greatly by species	●	●			
Pinus mugo	mugo pine		6-12	8-15	M	S	L	FS	L		adaptable	conifer; dense screen or prune to reveal sculptural form		●			●
Punica granatum 'Chico' 'Nana'	dwarf pomegranate	orange-red	3	3-5	M	M	L	FS	L		clay-tolerant	easy to keep low with pruning	●	●			
Raphiolepis X 'Majestic Beauty'	hybrid Indian hawthorne	pink	8-10	8-10	R	M	L	FS	M		adaptable	produces huge clusters of fragrant, pearl-pink flowers	●	●			●
Rhamnus alaternsus	Italian hawthorn		10-20	10-20	U	M	L	FS to PS	L		adaptable	fast growing; heat tolerant; large shrub; good screen		●			●
Rhamnus californica	coffeeberry		8	10	R	M	L/M	FS to PS	M	●	adaptable	grey-green leaves, red bark, and showy berries in fall	●	●		●	●
Rhus ovata	sugar bush	white	8-15	10	M	S	L	FS to PS	M	●	well-draining	dense evergreen foliage with small, white and red flowers; slow to establish than grows fast		●		●	●
Ribes sanguineum	red-flowering currant		4-6	3-6	U	F	L	PS	M		adaptable	red showy flower clusters		●		●	
Ribes speciosum	gooseberry		4	4-6	U	F	L	PS	M		adaptable	crimson, drooping flowers with evergreen leaves; thorns				●	
Ribes viburnifolium	Catalina currant	light pink, purple	2-3	5-7	U	M	L	PS	M	●	adaptable	good under oaks, needs shade; low-growing evergreen currant with handsome fragrant leaves and dark red stems		●		●	
Rosa californica	California wild rose	pink rose	3-5	4-8	S	M	L	FS	M	●	adaptable	fragrant pink rose flowers; excellent wildlife value			●	●	
Rosmarinus officinalis 'Tuscan Blue'	upright rosemary	purple blue	4-6	4-6	U	M	L	FS	L		well-drained	distinct upright form	●	●			●
Salvia apiana	California white sage	white	3-5	3-5	S	F	L	FS	L	●	clay-tolerant	wooly, silver-grey leaves; large shrub/small tree	●	●		●	●
Sambucus spp.	elderberry	white	10-25	8-15	R	S	L	FS to PS	L	●	well-drained	riparian habitat plant; attracts birds				●	
Styrax redivivus	California snowdrop	white	8-12	10	U	S	L	FS	M		sand to clay	showy, fragrant white flowers, smells like oranges				●	●
Symphoricarpos albus	snowberry	white	6	8	S	M	L/M	PS	M		adaptable	large white berries in the fall; berries are not edible					

SHRUBS (continued)

		DESCRIPTION					PLANTING & MAINTENANCE				SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS				
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native			Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Tagetes lemmonii	copper canyon daisy	gold orange	3-6	3-6	R	F	L	FS	M		well-drained	attracts butterflies; cut back hard after flowering	●	●			●
Trichostema lanatum	woolly blue curls	purple	2-3	3-4	M	M	VL	FS	L	●	well-draining	attracts hummingbirds	●	●			●
Teucrium fruticans 'Compactum'	bush germander	dark blue	3	3	R	M	L	FS	L		well-drained, clay-tolerant	tolerates heat, frost, and drought	●	●			●
Vitex agnus-castus	chaste tree	purple	20	20	U	F	L/M	FS	L		adaptable	small accent tree; attracts bees and hummingbirds		●			

GRASSES

		DESCRIPTION					PLANTING & MAINTENANCE				SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS				
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native			Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Aristida purpurea	purple three-awn	white	2-3	2	U	F	VL	FS	L	●	well-draining	purple seed heads that wave gracefully in the wind; recommended for erosion control on slopes, hillsides, and in canyons		●	●	●	●
Bouteloua gracilis 'Blonde Ambition'	Blonde Ambition blue grama	tan	1.5-2	1	M	M	L	FS	L	●	well-draining	can be mowed to 1.5 high but best as a meadow; can be grown from seed; no irrigation needed once established	●	●	●	●	●
Calamagrostis x acutiflora 'Karl Foerster'	feather reed grass	purple	2-3	2-3	U	F	L	PS		●	well-draining	background plant		●			
Carex barbarae	Santa Barbara sedge		1-3	1	S	M	L	FS	M		damp soil	rich green leaves; good for erosion control; little or no summer water			●		
Carex tumulicola	Berkeley sedge	brown	2-3	2-3	U	P	L	FS to PS	M	●	clay-tolerant; tolerates damp soil	greenish flowers age to brown in winter and spring	●	●	●	●	
Chondropetalum tectorum	small cape rush	brown	3-4	3-4	U	S	L	FS	L		accepts both dry and wet conditions	small, unique plant forms broad clumps of thin erect jointed stems; evergreen; good for erosion control	●	●	●		●
Deschampsia caespitosa	tufted hairgrass		1-2	2	U	M	L	FS to PS	L	●	tolerates most soils	green to greenish gold, turning straw color in the winter; they generally maintain good color through the summer, but won't grow much when it is hot	●	●	●		
Deschampsia caespitosa ssp. Holciformis	Pacific hairgrass		1-2	2	U	M	L	FS to PS	L	●	tolerates most soils	dense dark green foliage; good choice for erosion control near constant moisture such as marsh, vernal pool or seeps	●	●	●		
Festuca glauca 'Elijah Blue'	blue fescue		>1	>1	R	F	L	PS	L		well-drained	forms clumps of silver-blue leaves; long lived; use as edging		●	●		
Festuca idahoensis	blue bunchgrass		3	4	R	F	L	FS to PS	L		well-drained						
Helictotrichon sempervirens	blue oat grass	light blue	1-2	1-2	U	M	L	PS	L		well-drained	attractive symmetrical form and bue color with straw-colored flower	●	●			
Lomandra longifolia 'Breeze'	dwarf mat rush	white	2-3	2-3	U	M	L	FS	L				●	●	●		●
Muhlenbergia rigens	deer grass	yellow	4	4-6	R	M	L	FS	L	●	adaptable	clean, dependable form; very rugged	●	●	●	●	●
Muhlenbergia capillaris	pink muhly grass	pink	4	3-4	R	M	L	PS	L		well-drained	shows pink panicles in late summer	●	●			
Sisyrinchium bellum	blue-eyed grass	blue, yellow	1-1.5	0.5	U	F	VL/L	FS to PS	L	●	adaptable	dies back in summer; use as a small accent plant; long green leaves with blue and purple flowers with yellow center; goes dormant in summer		●	●	●	
Stipa pulchra	purple needlegrass		4-6	4-6	U	F	L	FS	L		adaptable	long-lived native bunch grass					●

PERENNIALS

		DESCRIPTION					PLANTING & MAINTENANCE				SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS				
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native			Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
Achillea filipendulina	fern-leaf yarrow	golden	3-4	2-3	U	M	L	FS	M		tolerates most soils	deeply-dissected, fern-like, aromatic, grayish-green to green foliage and tiny, long-lasting, bright golden flowers		●			●
Achillea millefolium	common yarrow	white	3	2	U	F	L	FS	L	●	tolerates most soils	erect plant with narrow green stems and wide white flowers		●	●	●	●
Artemesia californica	California sage	cobalt	3-4	4	U	F	L	FS	M	●	adaptable	fine, silver-gray leaf texture offers a nice complement to a hedge or background planting; can get scraggly		●	●	●	●
Convolvulus mauritanicus	dwarf morning glory	lavender	1	3	S	F	L	FS	L		tolerates most soils	gray-green leaves; funnel-shaped flowers have a pleasing lavender-blue color					●
Coreopis grandiflora	coreopsis	purple-blue	1.5-2.5	1-1.5	S	M	L	FS	L		tolerates most soils	daisy-like single flowers feature deep yellow rays (notched at the tips) surrounding a darker golden		●	●		●
Eschscholzia californica	California poppy	orange	1.5	1.5-2	S	F	VL	FS	L	●	well-draining	reseeds easily; summer dormant			●	●	●
Gaillardia grandiflora	blanket flower	varies	2-3	1-2	U	M	L	FS	L		well-draining	features daisy-like flowers in a wide variety of color arrangements, usually yellow to orange to red rays with maroon to orange banding at the petal bases and dark burgundy center disks		●	●		●
Heuchera maxima	island alum root	white, pink	1-2	3-4	S	M	L	PS		●	clay-tolerant	needs shade; good edging plant		●			
Iris douglasiana	Douglas iris	varies	1.5	1.5	S	M	L	PS	L	●	well-draining			●	●	●	
Salvia 'Bee's Bliss'	Bee's Bliss sage	lavender blue	1-1.5	4-6	U	F	L	FS	M		clay-tolerant	good on slopes; avoid overhead irrigation	●	●			●
Salvia clevelandii	Cleveland sage	lavender	4-6	3-5	M	F	L	FS	M		well-draining	flowers; good in dry gardens or on slopes; wonderful mass planted		●			●
Salvia greggii	Autumn sage	varies	2-3	5	M	F	L	FS	M		well-draining	shrub normally 2-3 feet tall, with small, minty aromatic green leaves		●			●
Salvia leucophylla	purple sage	purple	6	8	S	M	L	FS	L		adaptable	attractive late summer to frost bloom of showy bicolor flowers consisting of white corollas and		●			●
Salvia mellifera	black sage	white, blue, lavender	5	5	U	F	L	FS	M		adaptable	flowers can be white, blue, or lavender; easy to grow; likes poor soils and hot, dry areas		●			●
Tulbaghia violacea	society garlic	pink	2	1	M	F	L	FS	L		tolerates most soils	with its grassy foliage and tall flower stems, this plant is a delightful addition to a mixed border	●	●			●

GROUNDCOVERS/TURF ALTERNATIVES

		DESCRIPTION					PLANTING & MAINTENANCE				SOIL NEEDS	LANDSCAPE INTEREST/USES	SUITABLE AREAS				
Scientific Name	Common Name	Flower Color	Height (Feet)	Spread (Feet)	Shape: Mounding (M), Spreading (S), Upright (U), Round (R)	Growth Rate: Fast (F), Moderate (M), Slow (S)	Water Needs: Very Low (VL), Low (L), Moderate (M)	Solar Needs: Full-Sun (FS), Part-Shade (PS), Shade (S)	Maintenance Needs	CA Native			Street Corridors	Civic/Parks/Schools	Bioretention/Stormwater	Riparian Corridors	High Heat Exposure
GROUNDCOVERS																	
Arctostaphylos 'Emerald Carpet'	Emerald Carpet manzanita	white	1-1.5	3-6	S	M	L	FS	L	●	well-drained; adaptable	neat, green, spreader	●	●	●		●
Arctostaphylos uva-ursi	bearberry, kinnikinnick	white	1.25	1.25	S	M	L	FS	L	●	well-drained	set out plants 2' apart for solid cover	●	●		●	●
Baccharis pilularis 'Twin Peaks'	dwarf coyote brush	white	1-2	6-10	S	F	L/M	FS	M		tolerates most soil	small dark green leaves; excellent for erosion control; very important shrub for wildlife	●	●			●
Cotoneaster dammeri 'Lowfast'	bearberry cotoneaster	white	1	10	S	M	L	PS	L		well-drained	not good for traffic areas; good groundcover in shaded areas; red berries; tidy	●	●			●
Mahonia repens	creeping Oregon grape	yellow	2.5	3-5	S	M	L/M	FS to PS	M	●	well-draining	fall color; roots of some species may be mildly toxic		●	●		
Myoporum parvifolium 'Putah Creek'	creeping myoporum	white	<1	10-15	S	M	L	S	L		clay-tolerant	dies in extreme heat if overwatered	●	●			
Rosmarinus officinalis 'Huntington Carpet'	Huntington Carpet rosemary	blue	1-2	8	S	M	L	FS	M		adaptable	a beautiful carpet of deep blue flowers backed by fragrant foliage forms an attractive spreading groundcover	●	●			●
Salvia sonomensis	creeping sage	purple	2	6-8	S	M	L	FS	M	●	adaptable	nice mounding and spreading groundcover with lavender-blue flowers; fragrant leaves, especially in summer	●	●			●
Stachys byzantina	lamb's ear	yellow	1	2-3	S	F	L	FS	M		adaptable	white flowers; fuzzy leaves are reminiscent of lamb's ear; leaves are fragrant	●	●			●
Verbena peruviana	Peruvian verbena	scarlet, white	>1	2-3	S	M	L	FS	M		well-drained; adaptable	set out plants 2' apart for solid cover; offers super vibrant red flowers with small white centers	●	●			●
TURF ALTERNATIVES																	
Bouteloua gracilis	blue grama	reddish white	1.5-2	1	S	F	L	FS	L	●		irrigate to 1ft to establish; after established needs no irrigation; nice as border planting; okay to mow down to 1.5in	●	●	●		●
Buchloe dactyloides	buffalograss		<1	<1	S	F	VL	FS	L			requires little or no mowing; grows to 4" tall; start from sod;		●			●
Cynodon dactylon	hybrid Bermuda grass		<1	<1	S	F	M	FS	L			tolerates heat		●			●

appendix e

TREE PLANTING AND CARE RECOMMENDATIONS

TREE PLANTING AND CARE RECOMMENDATIONS

A healthy urban forest depends on proper planting practices and ongoing care. Providing proper care requires an understanding of the biological needs of trees and training in appropriate pruning techniques. The following recommendations outline how to select and plant a healthy tree and provide ongoing care, including pruning, root maintenance, mulching, fertilizing, pest management, and criteria for determining how and when to remove hazardous trees.

PLANTING

This section provides a comprehensive overview of techniques for planting new trees, from choosing quality nursery stock and soil preparation to placement. Successful implementation sets the stage for healthy growth throughout the tree's life.

SELECT QUALITY NURSERY STOCK

Choosing a healthy, vigorous tree specimen is the first critical step in the planting process. Trees should be healthy, vigorous, and typical for the species in regards to its crown form, leaves, branches, trunk, tree height, trunk diameter, and roots. 'Guideline Specifications for Nursery Tree Quality' prepared by the Urban Tree Foundation are recommended as specifications for City tree planting operations.

Container-grown plants in nurseries often produce poor root stock. Combined with improper pruning practices, it can lead to costly structural health problems in the future. Currently, nurseries nationwide are making a conscious effort at producing higher quality stock. They are undergoing major changes in regards to their tree stewardship techniques. The Urban Tree Foundation, California ReLEAF, and the California Department of Forestry and Fire Protection developed guidelines to produce higher quality trees in California.

WHEN TO PLANT

Ideally, new trees are planted during the dormant season: in the fall after the leaves drop or in early spring before new buds break *(in the height of summer, when temperatures soar it is the most stressful time)*. Trees can be planted throughout the year under the following conditions:

- Proper nursery growth conditions and practices as described in the Urban Forest Tree Foundation specifications.
- Proper care in transportation and handling.
- Proper handling during planting.
- Sufficient water availability with a maintenance agreement in place.

AVOIDING TRANSPLANT SHOCK & DETERMINING PLANT SIZE

Transplanting trees places them at risk of transplant shock. Container plants are less susceptible to transplant shock compared to balled and bare root transport methods. Typically, the smaller the container size, the less chance of shock. During a transplant, the root system of the balled and bare root trees have been reduced by 90 to 95 percent of their original size, often resulting in a higher rate of shock per number planted. For this reason, balled and bare root trees should not be specified unless approved by the Parks and Recreation Department for the specific situation and conditions.

SIZE RECOMMENDATIONS

The following information should be considered along with budget constraints, when determining what size of trees to plant:

- Plant **24-inch box** trees in tough urban conditions where vandalism and environmental conditions are less than favorable to the survivability of the tree.
- Plant **15-gallon** trees in locations where vandalism and vehicular conflict is not considered a problem. 15-gallon trees, having smaller root systems than 24-inch box trees, may adapt to the environment faster and have been proven by tree research to catch up in height within the first five years.

SOIL PREPARATION AND AMENDMENTS

Healthy soils, rich in minerals, organic matter, microorganisms, water and air are literally the foundation of a healthy urban forest. In a forest setting, plants naturally shed leaves and debris, creating layers upon layers on the ground which slowly decomposes, providing the soil creatures with a food source, which in turn makes nutrients available to the plants and protects them from pests and diseases. This healthy soil food web naturally feeds and protects plant health – no maintenance is required! In a typical urban environment, however, leaves and plant debris are swept up and hauled away to maintain a neat and tidy appearance. This process leaves the soil unprotected, deprived of this natural nutrition. In addition, urban soils are often heavily compacted, eliminating all air pockets, and are devoid of soil biology due to synthetic fertilizers, herbicides, pesticides and lack of organic material on the soil surface. To create a healthy urban forest, the soil must build and maintain a robust soil food web. This can be accomplished by:

- Avoiding soil compaction.
- Incorporating organic amendments into the soil at planting.
- Applying mulch on the soil surface at time of planting and once a year following planting, being careful not to bury trunk flare.
- Using only non-synthetic, natural amendments and fertilizers, such as quality compost or compost tea.
- Introducing mycorrhizal fungi to the tree roots at time of planting.

Fungi help provide food to the roots and protect them from soil borne pathogens. The texture of the soil, meaning the percent of sand, silt and clay, can't be modified. The soil structure, however, can be improved by supplying organic amendments that are specifically tailored to the soil's needs. Soil characteristics will vary considerably between sites, depending upon degree of compaction, microbiology and structure (arrangement of soil particles into aggregates). It is important to obtain site-specific soils tests and recommendations for organic, non-synthetic amendments to include with planting and ongoing care. Recommendations for compost and amendments should include bringing the soil organic content up to 5 percent. This soil test will also provide important information regarding the drainage characteristics of the soil, based upon its texture, which will also influence plant selection.

HOW TO PLANT

Proper planting techniques can greatly help a new tree adapt and thrive in its new environment. The simple procedures described in this section can be readily taught to local volunteers. The information presented has been developed from several sources including the ISA New Tree Planting, the City of Claremont Tree Policy Manual **2** and the Model Bay-Friendly Maintenance Specifications. The following steps outline how to plant a tree in a landscaped area, illustrated in Figure 1. These steps will need to be modified slightly for planting in paved tree wells or at tree grates, which are shown in Figures 2 and 3. Figures 1, 2, and 3 are included at the end of this document.

GENERAL PRUNING AND TREE CARE

It is recommended that pruning City trees be conducted or overseen by certified arborists from the Department of Parks and Trees. They assist in the bidding and supervision of third party tree pruning specialists to ensure that the work performed complies with City and ISA standards. They should also coordinate with utility company maintenance staff and provide site supervision of proper pruning techniques near utility lines. It is important to avoid tree topping, as it is the most harmful tree pruning practice known. Topping, also referred to as "heading", "tipping", or "rounding over", creates a hazardous and expensive pruning condition by removing 50 to 100 percent of the leaf-bearing crown of the tree. This temporarily starves the tree, subsequently activating latent buds and forcing the rapid growth of multiple shoots below each cut in order to put out new leaves as soon as possible.

WHEN TO PRUNE

The optimal pruning time depends upon the tree species. For most tree species the best time to prune is prior to new spring growth so that cuts or wounds on the tree can form closure at the fastest rate. Some trees may 'bleed' early in the spring, such as birch or maple, but this is not detrimental to the tree. Routine pruning of weak, diseased, or dead limbs can be done at any time of the year. Heavy pruning should not occur after spring growth due to the high-energy production state of the tree; an exception to the rule is the evergreen oak species. The optimal pruning time for evergreen oaks is summer, during their dormancy. Pruning evergreen oaks in the spring encourages disease and mildew.

Trees that are susceptible to diseases should not be pruned. Prior to pruning cycles, identify the trees to prune and related diseases. In certain cases, the City may determine that an outside arborist is necessary to confirm diagnosis and provide a third-party evaluation.

STRUCTURAL PRUNING (PRUNING YOUNG TREES)

Structural pruning is the most critical and rewarding of pruning practices. Recent research has found that annual training pruning for the first 3-5 years can greatly reduce future pruning costs. Most trees from the nursery have less than optimal root development and stock and need corrective pruning. Failure to do so will result in long-term problems that can jeopardize the health and safety of the trees. Here are some of the most common problems:

- Cracks in trunks and scaffold branching due to weight imbalance
- Poor branch attachment resulting in limb breakage
- Utility line interference, resulting in excessive and unattractive pruning
- Multiple heading cuts with weak attachments
- Pests and diseases due to tree stress from large cuts, excessive cuts, etc.
- Tree failure due to improper root to canopy ratios; trees that lack corrective pruning have underdeveloped root systems and dense canopies

Therefore, it is beneficial to train staff in train pruning during the early stages of tree development. Early corrective pruning assists in the development of a strong tree structure for the future, reducing long-term maintenance costs. In addition, trimmed branches and leaves can be chipped into on-site mulch for immediate use.

[*For examples of desired and unacceptable tree forms, refer to the Guideline Specifications for Nursery Tree Quality on the Urban Tree Foundation website.*]

PRUNING MATURE TREES

There are a variety of pruning challenges associated with maintaining an existing urban forest, as many trees are likely to have been poorly pruned or neglected. Mature trees should be addressed on a case-by-case basis to determine the most cost-effective solution: restore it through corrective pruning or remove and replace with another tree.

As newly planted trees mature past the train pruning phase, their need for structural pruning should decrease. Pruning for these trees shall follow general pruning procedures and techniques. The first step should be a formal inspection and evaluation.

PRUNING CYCLES

The frequency of pruning following the train pruning phase should be based on the species' growth pattern, rate, limb breakage risk, and other environmental factors. City street and parkway trees should be placed on one of three pruning cycles based on their growth pattern:

- Every 2 years for fast growing trees
- Every 3 to 4 years for medium growing trees
- Every 5 to 7 years for slow growing trees

INSPECTIONS

Prior to a pruning cycle a certified arborist from the Department of Parks and Trees should inspect the tree and site conditions to determine the scope of work needed. He/she should record the suggested pruning (or removal) actions and coordinate all work items with designated City divisions as needed.

PRUNING TECHNIQUES

All pruning techniques should be conducted in accordance with the International Society of Arboriculture standards. Information is provided by the ISA-arbor.org website and is universally accepted as the primary source.

Pruning is the process of selecting the best structure for a tree species given its specific site condition. New research has found that for the majority of trees selected for street tree planting, developing a strong central leader is critical to structural stability. In order to develop a strong central leader, select a structure that is most in line with the main trunk and that has the greatest potential. Make subordination cuts to competing branches in order to slow their growth. Some competing leaders may be equal or greater in trunk attachment diameter than the selected leader and/or more dominant in height. The objective is to not have any branches be equal or greater in diameter than the leader. Selectively remove branches along the leader to create even spacing, and ensure appropriate branch attachment angles of remaining branches. Cut branches flush with the leader, taking care not to leave stubs that could encourage unhealthy suckering growth. Skirt branches (located along the base of the trunk to the desired first scaffold branch) shall remain until they reach no more than 1-inch in diameter. One or two skirt branches are removed at a time over a 3-5 year pruning period. Skirt branching helps develop trunk caliper (strength of the tree) and provides shade to the trunk while young. Other pruning techniques include the following:

- Cleaning is the removal of dead, dying, diseased, crowded, weak, cross-branching and low-vigor branches from the crown of a tree.
- Thinning is the selective removal of branches to increase light penetration and air movement through the crown. It reduces weight on heavy limbs, and helps retain the tree's natural shape.
- Raising/Raise Prune removes the lower branches from a tree, often for clearance for utility lines and City Service vehicles. Reducing the height or spread of a tree is best accomplished by subordinating (pruning back) the leaders.

- Reduction reduces the size of a tree, often for clearance for utility lines. Reducing the height or spread of a tree is best accomplished by pruning back the leaders and branch terminals to lateral branches that are large enough to assume terminal roles (at least one-third the diameter of the cut stem). Compared to topping, reduction helps maintain the form and structural integrity of the tree.

HOW MUCH TO PRUNE?

Younger trees tolerate the removal of a higher percentage of living tissue better than mature trees. In principle, a tree can recover from several small pruning wounds faster than from a large wound. Mature tree pruning should not remove more than one-quarter of a tree's leaf-bearing crown. The older the tree, the less energy it has in reserve to close wounds and defend against decay or insect attack. The pruning goal for mature trees should be limited to removal of dead or potentially hazardous limbs.

PRUNING FOR STREET AND SIDEWALK CLEARANCE

Street and sidewalk clearance standards should be made using raise pruning techniques. Newly planted trees should be raise pruned evenly with the intent of balancing the form and aesthetics of the tree while it is young. Mid-age existing trees should be raise pruned only on the side requiring clearance. Mature trees should be raise pruned only for affected branches and with care due to the likely size of the limbs. Refer to earlier 'Pruning Mature Trees' and 'Inspections' sections as pruning in some cases may not be appropriate due to the health and condition of the mature tree. All City trees should be maintained to the following height clearance specifications established below:

- Arterial Streets. A 14-foot clearance should be maintained between the bottom of curb and limbs. Limbs may need to be raised higher on major arterials.
- Local and Collector Streets. Limbs above residential and collector streets should be raised gradually, with an 8-foot clearance between the bottom of curb and limbs, and a 14-foot clearance over traffic lanes, creating an arch over the street.
- Sidewalks and Park Paths. On sidewalks and park paths that are not affected by vehicular traffic, limbs should be between 7 and 8 feet above grade. A lower clearance may be appropriate in areas without sidewalks and areas where limbs do not interfere with pedestrian or bicycle traffic.

PRUNING FOR UTILITY LINE CLEARANCE

Line clearance work involving City trees should meet the standards of the United States Occupational Safety and Health Act (OSHA) and the American National Standards Institute (ANSI) for minimum distances to be maintained by tree workers from electrical conductors. Line clearance work shall also meet the utility pruning standards established by the International Society of Arboriculture (ISA) and the Utility Arborist Association (UAA). The California Public Utilities Commission (CPUC) General Order 95, Rule 35 mandates that trees must maintain an 18-inch clearance from high voltage transmission lines. The following strategies are designed to maintain the required clearance of City trees from high voltage transmission lines with a minimum of resprouting and fewer pruning cycles. These strategies are based upon known tree responses to various pruning techniques; however they should not take precedence over safe work practices.

- Thinning cuts are the most cost-effective practice for managing lateral or directional pruning. Directional pruning removes a branch to the trunk or a significant lateral branch growing away from the conductor.
- Topping, heading cuts, and round-overs (shaping cuts to create an artificial uniform crown) are not recommended for City-owned trees.
- Maintain normal growth height for all trees where possible. Train younger trees to mature away from high voltage conductors.

- Limit cuts to what is deemed necessary to achieve the required clearances. The placement of pruning cuts should be determined by anatomy, structure and branching habit. Limbs should not be arbitrarily cut off based on a pre-established clearing limit.
- Pruning should be restricted to removal of branches at crotches within the tree's crown. Final drop-crotch cuts should be made outside the branch bark ridge on the main stem or lateral branch. The remaining branch should be no smaller than one-third the diameter of the portion being removed. The removed portion should be pruned out to direct the remaining growth away from conductors.
- When the pruning of a branch results in the loss greater than one-half of the foliage, remove the branch to the parent stem.

TREE ROOT MAINTENANCE

Tree root maintenance is a crucial component of a healthy forest. Because the complex nature of a tree's root system is unseen, the decision to root prune should not be addressed as a single, isolated solution since this practice could create hazardous conditions for the City. Each situation is unique and requires careful analysis of the overall condition and location of the tree. The approach of investing resources on train-pruning new trees to reduce the need for expensive tree care in the future can also be used for tree roots and should consider three types of strategies for use in preventive and remedial problem solving:

TREE-BASED STRATEGIES

Select the right species for the right location.

INFRASTRUCTURE-BASED STRATEGIES

Infrastructure that is more accommodating for tree roots includes large planting space, curving sidewalks, increasing right-of-way and tree islands. Materials to consider include reinforced slab, thicker slab, expansion joints, pervious concrete, asphalt, decomposed granite, compacted gravel, pavers, and rubber sidewalks.

ROOT ZONE-BASED STRATEGIES

Root zone strategies include the use of root barriers, continuous trenches, root paths, steel plates, foam underlay, structural soils, and soil modification. The Parks and Recreation Department should be responsible for developing the strategy for root issues. Alternatives to cutting roots greater than 2 inches in diameter should be considered before root pruning. Sidewalk repairs including tree root pruning should occur before active root growth (temperatures between 68 and 84 degrees F), which may range from late summer to late fall. Avoid root pruning before bud break.

ROOT PRUNING

Root pruning is used as a remedial treatment intended to reduce or eliminate further damage, but it is very harmful to a tree. The structural strength and health are affected by this technique. Therefore, root pruning should only occur when the Department of Parks and Trees approves this strategy as safe for the tree.

- Trenching shall occur along one side with the distance from the trunk 6 inches for each inch of Diameter at Breast Height (DBH). The Department of Parks and Trees should determine if trenching requires tunneling under roots for the health and safety of the tree.
- No more than one-third of a tree's roots system should be removed.
- Roots should be cut back at least 4 inches away from new hardscape to the nearest node.
- Pruning cuts should be clean and smooth with no crushing or tearing of the remaining root.

ROOT SHAVING

Root shaving is the practice of reducing the thickness of an offending root without severing it completely when retention of the root may be necessary for the structural integrity and general health of the tree. Root decay is greater with root shaving and callous growth may also grow to lift paving. Therefore, this practice should be considered carefully and the following practices should be followed:

- Select buttress root that is 4 inches in diameter or greater.
- Shave roots down to allow for at least 2 inches of clearance between the root and the new hardscape.
- No more than one-third of a root's diameter shall be shaved off.
- Pruning cuts should be made clean and smooth with no crushing or tearing of the remaining root, typically using a root cutting machine and/or a chainsaw.

TREE REMOVAL

The City should consider the following conditions prior to tree removal:

HAZARDOUS TREE REMOVAL

The City should recognize that hazardous trees are the highest priority of care, and work to remove these trees immediately.

A large percentage of existing street trees in the city should be evaluated for hazard conditions due to topping or lack of proper care resulting in poor structure and potentially hazardous conditions. Existing trees under these conditions should undergo a tree evaluation to determine the degree of hazard or whether or not the cost/benefit ratio of corrective pruning can improve the health, safety, and appearance of the tree versus removal and replacement of the tree. Hazardous trees shall be identified based on the following criteria:

- Large, dead branches in the tree.
- Detached branches hanging in the tree.
- Cavities or rotten wood along the trunk or in major branches.
- Mushrooms present at the base of the tree.
- Cracks or splits in the trunk or where branches are attached.
- Adjacent trees have fallen over or died.
- Strong lean at the trunk.
- Many major branches arise from one point on the trunk.
- Damaged, broken or injured roots.
- Changes in the soil level.

DEAD TREE REMOVAL

Parkway and open space trees that are dead or are determined by an ISA Certified Arborist to be in severe decline should be removed immediately. In parks and open space where the dead trees do not pose a health and safety hazard, nor affect the aesthetic value of the area, the trees or portions of removed trunks should remain onsite to decompose.

EMERGENCY REMOVALS

Healthy trees should be removed if the City decides an emergency condition exists and it is the only option available.

DISEASE AND/OR INSECT INFESTED TREE REMOVALS

Trees that are evaluated for a disease and/or insect infestation should be removed if:

- The disease and/or insect is a threat to other nearby trees or the greater urban forest, and
- The treatment for the disease and/or pest is determined to be a costly or non-beneficial solution to regaining the health of the tree.

INFRASTRUCTURE DAMAGE TREE REMOVALS

When it is determined by City arborists that there is no other strategy for a tree that is in conflict with City urban infrastructure or that it is damaging the structure of an adjoining property (under or above ground), the tree should be removed.

INVALID REASONS FOR TREE REMOVAL

The following are not considered valid reasons for tree removal:

- Leaves getting into gutters are a nuisance to remove.
- Fruit drop is messy.
- Roots invading the sewer system as a result of deteriorating infrastructure (if roots are causing deterioration, have a certified arborist evaluate situation).
- Hardscape damage when viable strategies are available.

MULCH AND FERTILIZER

ORGANIC MULCH

Organic mulch provides multiple benefits to the urban forest. Mulch from tree chips, compost, or other organic matter is the urban equivalent of the natural organic matter shed from plants in a natural or forest environment. The use of mulch accomplishes the following:

- Saves time and money by reducing weeds as much as 90 percent, thereby reducing labor costs.
- Reduces the cost of buying and applying herbicides.
- Conserves water and reduces the cost of irrigation.
- Protects plant roots from temperature extremes and keeps soils cool.
- Organic matter feeds benefit soil organisms, which promote healthy plant growth.
- Prevents soil compaction and improves its structure.
- Reduces runoff.
- Builds and retains essential nutrients in the soil.
- Reduces fertilization costs.

All newly planted trees should use the mulch as directed per the planting detail. Mulch and beneficial organic matter such as leaf debris should NOT be removed from City parkways or open space planting beds. Organic mulch should be used as a top layer (minimum 2 inches to maximum 4 inches). The City should develop a mulch recycling program that utilizes chips from removed trees for immediate placement on public or private property.

FERTILIZING

Urban soils are typically depleted of essential nutrients due to the lack of organic mulch. Nutrient-deficient soils reduce plant vigor and increase its susceptibility to pests and infectious diseases. The City should promote healthy tree care by using organic fertilizers, such as compost and compost tea, where they are needed per the recommendation of a certified arborist from the Department of Parks and Trees. Natural fertilizers will release nutrients slowly, and encourage healthy soil biology. The type and timing of fertilizing should be based on the

species, evaluation of the site and health condition of the tree. However, as a rule of thumb, applying compost or fertilizer before rain facilitates the transfer of nutrients into the soil. Mature trees often require specialized fertilization specific to the assessed ailments of that species. For a mature tree that is desirable to retain, a third-party diagnosis and treatment should be performed when the staff arborist is not able to prescribe a treatment. The consultant should be an ISA-certified arborist who specializes in mature tree care and fertilization. At a minimum, trees should receive a 1-inch topdressing of quality compost annually, as certified by the US Composting Council's Seal of Testing Assurance (STA) program, followed by 2 to 3 inches of mulch. This organic layer will slowly break down, adding nutrients to the soil, conserving water and minimizing weed growth. Fertilizers that are not approved or are restricted from use by the Organic Materials Research Institute (OMRI) should not be used.

PEST AND DISEASE MANAGEMENT

The following recommendations for managing pests and diseases are based upon an Integrated Pest Management (IPM) approach, adapted from the Model Bay-Friendly Landscaping Maintenance Specifications, by Stopwaste.org. The practices described below for selecting, planting, pruning, watering, and ongoing care will also go a long way to minimize problems in the first place.

Pest management should rely first on cultural, mechanical, physical, and biological control methods. Chemical controls may be applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will provide adequate pest control should be applied. Pesticides should not be applied on a prescheduled basis.

The Department of Parks and Trees monitors trees to identify and assess pest problems, and to take actions to control pests that affect tree health and appearance. When considering the use of pesticides on city property, preference should be given to readily available non-pesticide alternatives. The City should employ integrated pest management procedures, including those described below.

MONITORING

Regular monitoring of the urban forest on a routine basis is the best way to identify the presence of beneficial and detrimental insects and pests, as well as determining the extent of damage to plants. It is common for pest infestations to appear during a specific season, cause limited damage to the vegetation, and then leave. In such cases invasive treatments are not needed. Therefore, it is important to maintain ongoing records to better understand natural cycles and occurrences.

PEST CONTROL

If controlling pests is deemed necessary, an IPM approach should be used that focuses first on cultural, mechanical, and physical methods first, and then on biological methods. Pesticides should be utilized as a last resort.

CULTURAL, MECHANICAL, AND PHYSICAL METHODS

Many maintenance practices can reduce and/or limit the ability of pests to survive and reproduce. Proper timing and application of fertilizers, watering, pruning, and maintaining a mulch layer can greatly reduce a tree's susceptibility to infestations. For example, pruning of infested or infected branches should be scheduled for when pests are inactive, fallen leaves and branches that contain disease inoculum should be removed, and insects should be trapped with sticky traps. Maintaining and nurturing healthy soil by using compost as a top dressing and avoiding compaction and synthetic chemical applications will encourage a diverse soil food web that can naturally protect the trees roots from soil borne pathogens and predators.

BIOLOGICAL METHODS

There are many biologically-based pesticides that have little or no negative impact on the environment. Using biological controls requires proper assessment, application, and timing for best success. Including a diverse plant palette of native species called insectary plants can attract beneficial predatory insects.

PESTICIDES

Pesticides include insecticides, fungicides, and other chemicals that control unwanted pests. When pesticides are deemed necessary, IPM recommends that the least-toxic control be utilized.

LEAST TOXIC PESTICIDES

The following pesticides are the least toxic to the environment and should be used only as a last resort. Least-toxic pesticides are defined as having a high LD-50, low residual, and narrow range of toxicity. As with biological controls, these approaches are only effective when applied at the appropriate life-stage of the target pest. Insecticidal soaps, horticultural oils, herbicidal soaps, neem, and Pyriproxyfen insect growth regulator (e.g. Distance IGR) are all examples of the least toxic pesticide.

RESTRICTED CHEMICALS

It is highly recommended that the following chemicals be restricted from use in the landscape. These organophosphate-containing pesticides can persist in the environment and have been found in many impaired creeks, streams, and arroyos in California. Diazinon (trade names Spectracide®, Knoxout®), chlorpyrifos (trade names Durs-ban®, Pageant®) and malathion and carbaryl (trade name Sevin®) are included in this category.

Many water-quality agencies also recommend against using pyrethroids and pyrethrins containing piperonyl butoxide (PBO) in the landscape. Pyrethrins have been identified as toxic to birds, fish, and beneficial insects and should be used only as a last resort, and carefully applied to avoid runoff and contact with non-target plants.

At no time should the following substances be utilized in the landscape: Toxicity Category I or II Pesticide Products, any pesticide containing a chemical identified by the State of California as a chemical known to the State to cause cancer or reproductive toxicity pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986, and any pesticide classified as a human carcinogen, probable human carcinogen or possible human carcinogen by the United States Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances.

appendix f

CLEAN AND GREEN VACANT LOTS

Clean and Green Vacant Lots:

Review of Program Options

for the

Oroville Urban Area

PREPARED BY:

RYAN MILLER, ASSISTANT PLANNER

BUTTE COUNTY DEPARTMENT OF DEVELOPMENT SERVICES

“Clean and Green” Programs

Greening vacant lots is a high-impact, relatively low-cost way to help provide urban residents with a blight-free environment. “Clean and Green” programs are used by municipalities to clear vacant lots of debris and transform them into green community amenities. Such programs focus on properties with long-term absentee owners, long-term unpaid taxes/tax liens, and illegal dumping or other persistent code enforcement issues. Greened and cleaned properties can be further transformed to provide green space for neighborhood activities, demonstration and educational gardens, and/or community gardens for food production.

“Clean and Green” programs produce immediately noticeable results that can be visually dramatic. They cost little relative to other urban health and safety programs. They can respond to community concerns such as interest in creating community gardens, pocket parks, or other community amenities. Peer-reviewed research indicates that simply cleaning and greening vacant lots significantly reduces crime, decreases community stress levels, and increases participation in outdoor exercise. Cleaning and greening stimulates investment in the community and can increase the value of nearby homes by as much as 30 percent.

Cleaned and Greened Vacant Lot in Philadelphia

Photo courtesy of Pennsylvania Horticultural Society

The “Clean and Green” effort implemented by the Pennsylvania Horticultural Society, which works with city agencies and community partners to implement the Philadelphia LandCare program, provides an effective model. As demonstrated by the LandCare program, cleaning and greening measures can be as simple as:

- Removing trash and other debris
- Grading the property, if needed to manage storm water
- Adding compost-enriched topsoil for any plantings
- Planting shade trees to create a attractive setting
- Installing simple fencing around each lot to show it is being cared for, and to deter illegal dumping.

Effective “Clean and Green” programs require maintenance of the site several times each year to mow grass, tend trees, or repair fence. In a component of the Philadelphia program, community-based organizations also clean nuisance lots that are not yet scheduled for greening.

Vacant Lot in Philadelphia Before and After Cleaning and Greening

Photo courtesy of Pennsylvania Horticultural Society

Strategies to Clean and Green Vacant Lots in South Oroville

Illegal dumping, visual blight, and persistent code enforcement issues were topics identified by the Southside neighborhood during preparation of the Oroville Area Urban Greening Plan. The Plan presents a unique opportunity to help the Oroville community grow safer and healthier while tackling a familiar and stubborn nuisance. This appendix has been prepared to examine opportunities to implement a "Clean and Green" program in the Oroville area.

The report is organized into two sections as follows:

- **Background Information.** Explains in more detail why cleaning and greening is an important priority with outcomes that spread beyond "green" objectives. Provides an overview of the magnitude of the illegal dumping and vacant lot problem in South Oroville and surrounding areas. Outlines the guiding goals for any cleaning and greening programs pursued by the local government.
- **Policies and Strategies.** Sets the framework for any feasible cleaning and greening programs pursued by the local government. Outlines several strategies the local government may pursue in order to achieve cleaning and greening goals. Identifies potential funding sources and potential partners for achieving these goals.

Cleaning and Greening in Progress

Courtesy of Pennsylvania Horticultural Society

Background Information

While an important purpose of any strategy to improve vacant lots will be the creation of new community assets, an equally important purpose is to improve the health and safety of the surrounding areas. Cleanup and re-use of vacant properties has been linked to reductions in crime and improvements in health for neighboring residents. In a 2011 study published in the *American Journal of Epidemiology*, researchers found that areas of Philadelphia in which vacant lots had been "greened" experienced reductions in assaults and vandalism, and decreases in stress levels among neighbors[1]. These results parallel what might be expected according to the so-called "broken windows" theory of criminal behavior, which suggests that disorder and crime are "inextricably linked"[2]. Simply establishing order on what were formerly distressed properties appears to have had social and psychological effects that spread beyond the property itself. Addressing the vacant lot and dumping issues in South Oroville is important because it is likely to impact the broader health and safety outcomes of the community. Developing cleaned and green lots into active community amenities such as community gardens would enhance these beneficial effects.

Illegal Dumping and Vacant Parcels in the Southside Neighborhood

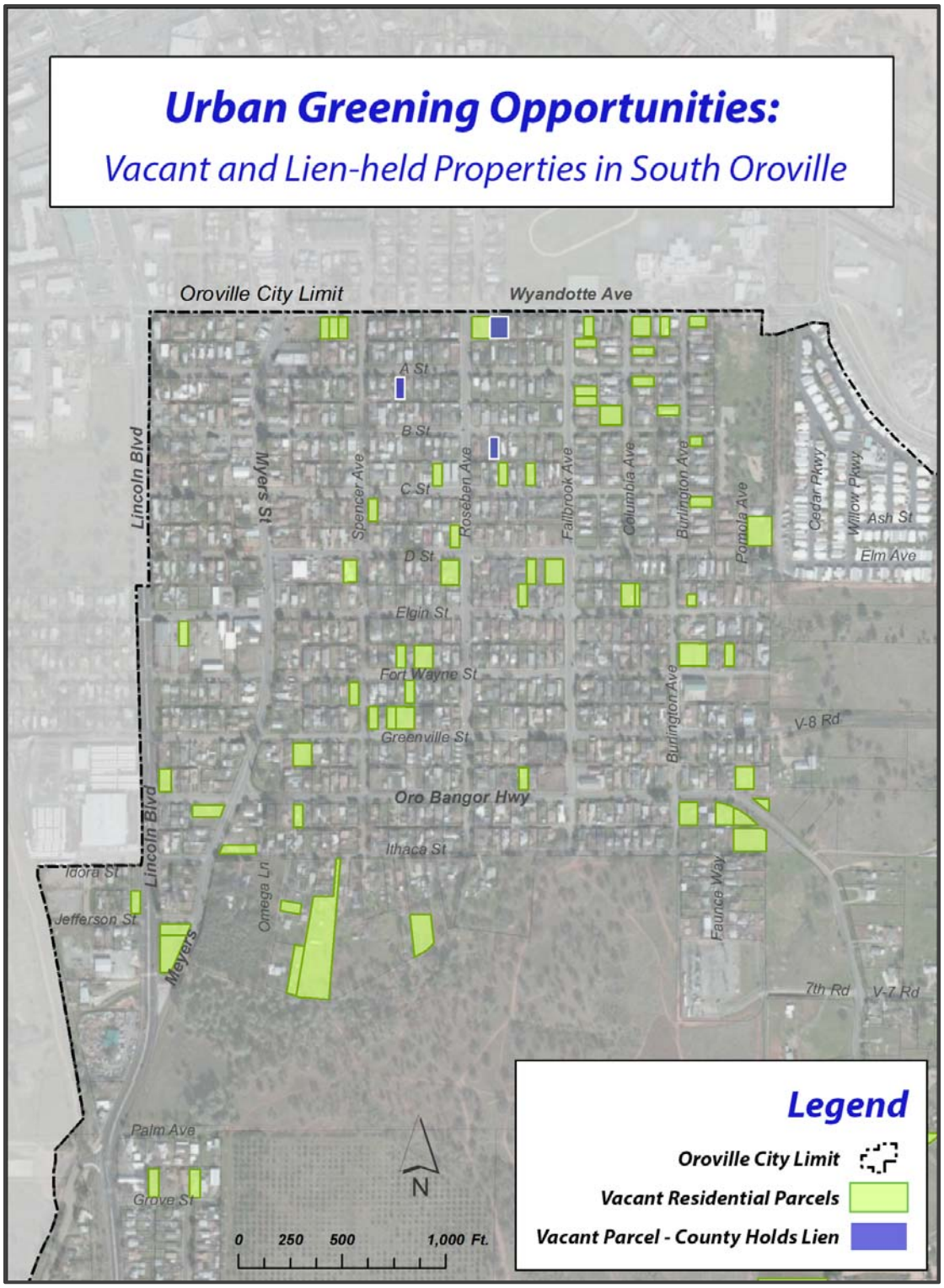
Illegal dumping on vacant properties is a serious issue in South Oroville. Numerous residential parcels in South Oroville are vacant according to county parcel data assembled in 2012. Within the Southside neighborhood[3], 61 of a total 796 residential parcels were vacant – a residential vacancy rate of approximately 7.7%. (See area map on the following page.)

---

[1] *A Difference-in-Differences Analysis of Health, Safety, and Greening Vacant Urban Space*, American Journal of Epidemiology (January 2011). Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3224254/, accessed August 23, 2013.

[2] *Broken Windows: The Police and Community Safety*, The Atlantic Monthly (March 1982). Available at http://www.manhattan-institute.org/pdf/_atlantic_monthly-broken_windows.pdf, accessed September 14, 2013.

[3] Parcels within this 'primary grid' are defined as any residential parcels outside the City of Oroville and within or along the boundary formed by Wyandotte Avenue, Burlington Avenue, Ithaca Street, and Lincoln Boulevard.



Vacant and Lien-Held Properties in South Oroville (2012)

Potential Implementation Strategies

In order to be successful, strategies for vacant lot cleaning and greening must receive sufficient and sustainable funding and must be actively supported by the community. Therefore, any strategies pursued as part of the Oroville Area Urban Greening Plan should:

- Not create new regulations or codes
- Be carried out by neighborhood associations, non-profits, and private property owners
- Be largely self-funded or grant-funded
- Where feasible, provide additional opportunities for outdoor activities, reduce flooding, encourage urban agriculture and community gardens, provide trees and plantings for shading and cooling, help improve soil conditions, and reduce the potential for dumping and toxic waste.

Illegal Dumping in Vacant Lot, South Oroville

The planning core team evaluated various approaches taken nationwide. Five strategies are presented as the most appropriate for further consideration. The local government is not limited to the strategies outlined in this report, nor is it limited to pursuing just one of them at a time. These strategies are presented as a bundle of ideas, each of which may prove most appropriate at any time given the availability of grant funding, the capacity of non-profits, and most importantly, the desires of the community.

Strategy 1. *Create a Vacant Lot Inventory*

According to economic theory, both buyers and sellers must be privy to good information in order for markets to function efficiently. This is true for the property market as it is for markets for goods and services. It may be the case in South Oroville that owners of vacant and/or abandoned properties are not aware that there might be parties interested in buying or leasing their land for the purpose of community gardening or recreation. Conversely, local community groups such as religious organizations or other non-profits who would be interested in utilizing vacant lots for gardening may not know how or where to get in touch with absentee property owners.

While using land for such uses may not be what the property owner had in mind for the land, it is certainly a more attractive return on investment than if the land remains vacant (zero). In this case, the local government can act to facilitate such transactions by creating an inventory of vacant lands, pursuing absentee landowners, and publishing maps of which parcels might be available for purchase or lease. This strategy of inventorying and information dissemination has been strongly recommended by the International City/County Management Association[4] and the Brookings Institution[5].

[4] *The Revitalization of Vacant Properties: Where Broken Windows Meets Smart Growth*, International City/County Management Association (Date Unknown), available at: http://www.usmayors.org/brownfields/library/Revitalization_of_Vacant_Properties.pdf, accessed August 23, 2013

[5] *Seizing City Assets: 10 Steps to Urban Land Reform*, Center on Urban and Metropolitan Policy, The Brookings Institution (October 2002), Available at: http://www.brookings.edu/research/reports/2002/10/metropolitanpolicy-brophy, accessed August 24, 2013

Cost:

- Additional staff time for outreach and mapping.

Concerns:

- Efforts may not be sufficient enough to cause community-wide change.
- Relies entirely on the interest and existing funds of community groups

Strategy 2*. Apply for CDBG Funding*

The local government might take a more active role in securing funds to purchase or lease vacant lots in partnership with non-profit groups seeking to use the lots for gardening. It may apply for Community Development Block Grant (CDBG) funding to acquire properties on behalf of local non-profit organizations, and these organizations may in turn apply for other grant funding to commence their gardening operations.

Community Development Block Grant funds are intended to help local jurisdictions further the national objectives of combatting blight and providing benefits to low and middle income populations, with the second of those goals being the primary concern for jurisdictions within the State of California. The funds may be used for any number of activities, including acquiring or leasing properties which are "blighted, deteriorated, deteriorating, undeveloped, or inappropriately developed from the standpoint of community development and growth[6]" in order to use them in a way that creates benefit for neighboring low or middle income populations. These funds may be used to acquire or lease lots for the public entity itself, or on behalf of other entities or non-profit organizations, so long as they also intend to use the lots to further the same objectives. Such an entity or non-profit must have the capacity to carry out the objectives in a six-month timeframe.

The local government may apply for funds to acquire lots for use by the Feather River Recreation and Parks District (FRRPD), or for use by well-organized nonprofits such as the Northern California Regional Land Trust. Once lots have been acquired and transferred, organizations might apply to programs such as USDA's Community Food Projects Competitive

[6] State Administered CDBG, U.S Department of Housing and Urban Development, available at: http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/programs/stateadmin, accessed August 23, 2013.

Grants Program[7] to kick-start funding for community gardening projects. It is worth noting that entities may apply for CDBG funding for projects that fall outside their jurisdictions, but within their area of influence.

Cost:

- Staff time writing grant(s), staff time spent coordinating with other public entities or non-profits

Concerns:

- CDBG funding is highly competitive
- Any use of CDBG funding to acquire/lease vacant lots takes away from CDBG funding historically used for other programs
- Public entity or non-profit to benefit from CDBG funding must have organizational capacity to fulfill grant obligations in a short time-frame. This may rule out small community groups.

Strategy 3*. Apply for CalRecyle Funding*

If the local government wishes to pursue the clean-up of sites directly, the State of California offers a grant program aimed at helping local jurisdictions cope with the problem. The Illegal Disposal Site Abatement Grant program, administered by the California Department of Resources Recycling and Recovery (or CalRecycle), offers up to $500,000 per project to reimburse local jurisdictions for work performed to clean up private properties. Eligible costs include waste removal and disposal, installation of fences or barriers, and other preventative measures.[8] The local government is especially encouraged in the grant to subcontract with the California Conservation Corps (CCC) to undertake the cleaning efforts.

[7] *Community Food Projects Competitive Grants Program (CFPCGP)*, National Institute of Food and Agriculture, United State Department of Agriculture. Available at: http://www.csrees.usda.gov/fo/communityfoodprojects.cfm, accessed September 22, 2013.

[8] *Illegal Disposal Site Abatement Program*. CalRecycle, available at: http://www.calrecycle.ca.gov/lea/grantsloans/solidwaste/LEA/default.htm, accessed September 12, 2013.

Cost:

- Staff time spent writing and applying for grant, coordinating with grant administrator(s) and subcontractor(s)
- Any material expenses or staff time not covered by grant

Concerns:

- Funding is highly competitive
- CalRecycle requires pursuit of 'cost recovery' through billing property owners, unless the local government can prove financial hardship of property owner through multiple documents

Strategy 4: Hold Community Cleanup Events

Holding a "community clean-up" event is a strategy aimed at preventing illegal dumping before it takes place. Such events can involve numerous organizations, and generally include free drop-off of unwanted furniture and other household items at a designated and well-staffed location for a specific date. The City of Chico holds a popular "Drop and Dash" program aimed at college students as the school year ends, and also holds smaller-scale community clean up events in specific neighborhoods such as Chapmantown[9]. In such events, a non-profit such as the Butte Environmental Council (BEC) may act as organizational lead, while other entities such as the Salvation Army or Goodwill assist with re-use of any household items suitable for resale. The County administers 'Community Cleanup Grants' of up to $2,000 per event to assist with dumpster rental or disposal fees[10]. Events making use of the grant money must strive to recycle as much of the material as possible, and require the blessing of the local County Supervisor.

Cost:

- Staff time reaching out to BEC or other groups, assisting with the event itself

[9] Personal Interview, Raul Gonzalez (City of Chico). September 20, 2013.

[10] *Community Cleanup Grants*, Butte County Department of Public Works Solid Waste Division, available at: http://www.buttecounty.net/Public%20Works/Divisions/Solid%20Waste/Community%20Cleanup%20Program.aspx, accessed September 20, 2013.

Concerns:

- A suitable drop-off location must be located
- An interested non-profit must be willing to lead the event

Strategy 5: Acquire Lien-held Properties

In the course of pursuing code enforcement and nuisance abatement, the County acquired liens on several vacant properties in South Oroville. A possible strategy would be to acquire these properties outright through the foreclosure process, then work with community organizations and partner agencies to clean up and/or transfer these properties to non-profits to use as community gardening space. This strategy has been used successfully in Philadelphia through the LandCare program[11] administered by the Pennsylvania Horticultural Society.

Cost:

- Going through foreclosure process
- Transferring title to interested parties

Concerns:

- Acquisition of properties may be a lengthy process
- Efforts may not be sufficient enough to cause community-wide change

Considered but Dropped from Further Evaluation: Land Banking

The process of public-sector led land-banking has seen success in some areas of the country, but is infeasible in California due to lack of comprehensive enabling legislation[12].

[11] *LandCare Program*, Pennsylvania Horticultural Society, available at: http://phsonline.org/greening/landcare-program, accessed August 25, 2013.

[12] *Revitalizing Foreclosed Properties with Land Banks*, U.S. Department of Housing and Urban Development (August 2009), available at: http://www.huduser.org/publications/affhsg/landbanks.html, accessed August 23, 2013.

Conclusion

Cleaning and greening vacant lots in South Oroville is a critical piece of the Oroville Area Urban Greening Plan. Cleanup of vacant lots would have direct and measurable impacts on the lives of community members. This report provides a framework from which the local government can pursue the strategies and funding opportunities that best address both the realities of the situation and the desires of neighbors.

Philadelphia Cleaned and Greened Lot

Photo courtesy of Pennsylvania Horticultural Society

appendix g

INDUSTRIAL AREA GREENING

INDUSTRIAL AREA GREENING:

DESIGN PRINCIPLES AND OPTIONS

FOR MANAGING AIR AND WATER QUALITY

AND STORMWATER

IN THE OROVILLE INDUSTRIAL AREA

PREPARED BY:

CHRIS THOMAS, AICP, SENIOR PLANNER

BUTTE COUNTY DEPARTMENT OF DEVELOPMENT SERVICES

1 INTRODUCTION

1.1 Purpose of the Design Principles and Options

These design principles and options present various approaches to stormwater management and improved access to a future Oroville Industrial Area (Industrial Area) that is building out and thriving with new, productive businesses. Their purpose is to:

1. Mitigate water and air quality impacts that will occur with future buildout;
2. Provide a comprehensive basis for the City of Oroville and businesses to more effectively comply with water and air quality regulations; and
3. Enhance the attractiveness and marketability of the Industrial Area.

The almost 1,700 acre Industrial Area – one of the largest contiguous assemblages of land in northern California zoned specifically for light to heavy industrial activities – is under-utilized despite its rail and highway access, close proximity to a potential workforce, and regional proximity to the significant manufacturing, trade and shipping activities in the San Francisco and Sacramento metropolitan areas.

Figure 1. Oroville Industrial Area

Modest to significant growth and employment are expected to occur in Oroville, Butte County and the Sacramento Valley over the next 30 years. A commensurate increase in demand for warehousing, manufacturing, processing, recycling and any of a number of other light to heavy industrially oriented land uses may also be expected. The Industrial Area, by virtue of its location and large reserve of flat, easy-to-build-on terrain, is positioned to provide a full spectrum of industrial goods, services and employment.

Ongoing growth in the Industrial Area will occur under increasingly stringent environmental regulations. Industrial land uses are often associated with various deleterious effects upon the environment and a local community's quality of life, including impacts related to traffic congestion, air and water quality. Industrial activities typically take place within a large footprint of structures, paved surfaces for parking and loading, storage areas, and other types of impermeable surfaces that increase the amount – and decrease the quality – of stormwater runoff with consequent impacts upon local surface and ground water. In addition to air quality emissions that may occur with various industrial processes, businesses locating in the Industrial Area will generate traffic, including the trucking of raw and processed materials, along with vendor and employee trips.

Future projects in the Industrial Area will have to comply with applicable regulations and demonstrate that they are not contributing to a water or air quality issue. The Industrial Area is located less than a half mile from the Feather River, which provides critical habitat for four endangered or threatened fish species, along with a number of other beneficial uses for both the environment and the public. While stormwater runoff is not a significant issue for the currently undeveloped Industrial Area, ongoing buildout will increase the amount of runoff that will ultimately end up in the Feather River.

Air quality is an ongoing concern in the northern Sacramento Valley. While significant traffic to and within the Industrial Area is clearly not an issue at present, congestion at surrounding intersections on Oro Dam Boulevard does occur during commute hours. Assuming a significant proportion of future Industrial Area employees will commute from surrounding Oroville neighborhoods suggests that local congestion – along with its air quality impacts – will increase.

Although the contribution to traffic, air and water quality impacts of any one business may be relatively small, the cumulative effects of many different businesses locating in the same area can be considerable. Planning often follows projects rather than preceding them and their cumulative impacts – traffic congestion, declining air and water quality – are often addressed in a fragmented fashion after they become established. These design options offer a suite of flexible tools that may be applied incrementally as the Industrial Area builds out, providing an opportunity to proactively address the water and air quality issues that may be anticipated with its ongoing growth. Their focus is on the management of stormwater and the creation of a street environment that encourages cycling and walking as alternatives to the personal car for commuting.

If well designed and implemented, the design options presented in this document will help the Industrial Area meet requirements for regulatory compliance while also creating an aesthetically pleasing, dynamic and forward-looking built environment. While these design options are intended to anticipate and reduce impacts to water and air quality that may occur with build out of the Industrial Area, they represent programmatic guidance only and should not be used as a substitute for site specific design and engineering.

1.2 Land Use and Environmental Context

Land Use

Location and Access

The Industrial Area – consisting of lands zoned by the City of Oroville and Butte County for light and heavy industry (in addition to some commercially zoned parcels along Oro Dam and Feather River Boulevards) – comprises about 1,670 acres approximately two miles southwest of downtown Oroville, within an area bounded by Oro Dam Boulevard (State Route 162) to the north, the former Western Pacific Railroad right-of-way to the east, Ophir Road to the south, and SR 70 to the west (see **Figure 2: Oroville Industrial Area**).

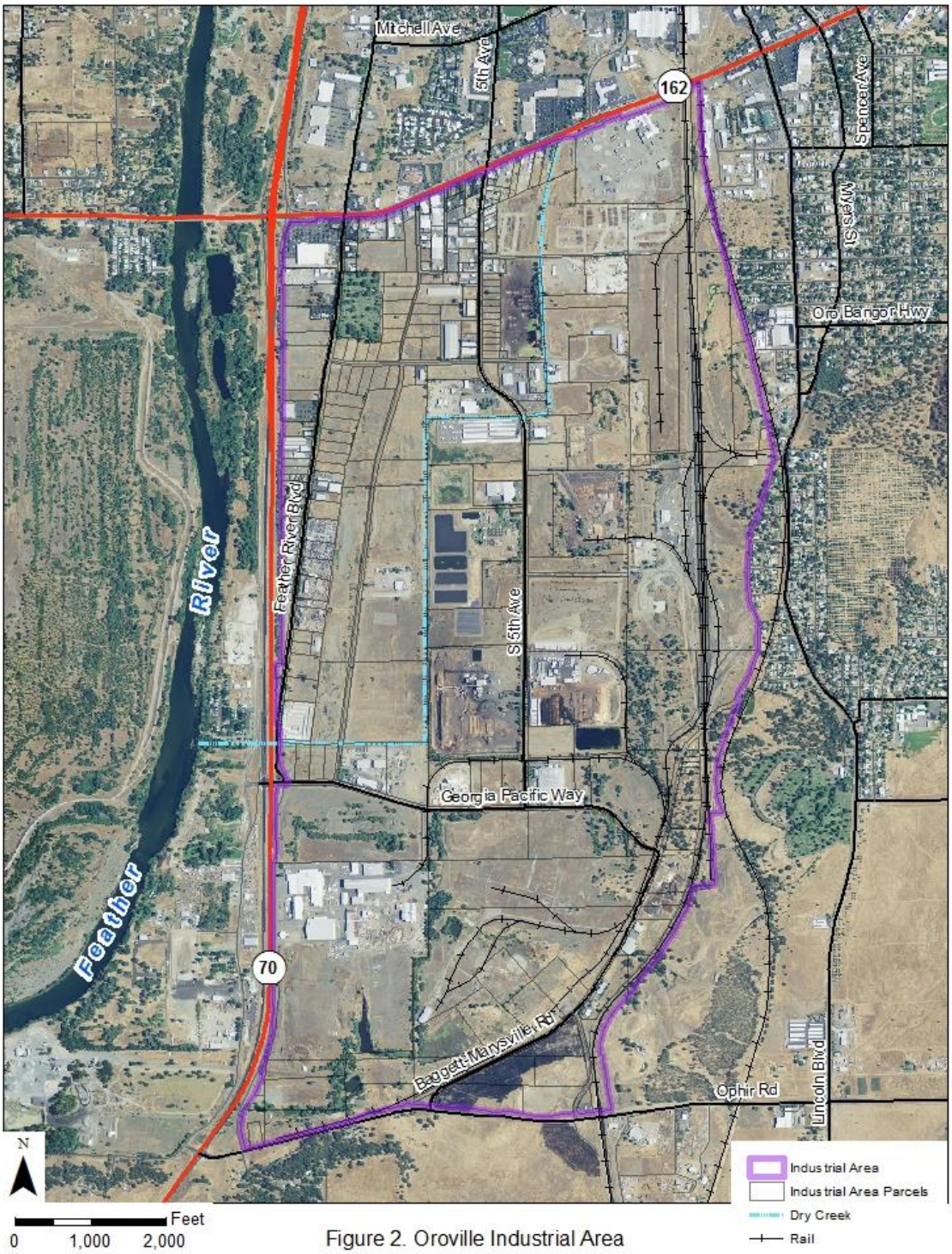


Figure 2. Oroville Industrial Area

Road access to the Industrial Area is from SR 70 via Ophir, Bagget-Marysville and Georgia Pacific Roads in the south, Feather River Boulevard on the west, and 5th and 7th Avenues descending from Oro Dam Boulevard in the north. Internal circulation is provided by additional connecting roads and cul-de-sacs. Not all parcels in the Industrial Area have built road access at this time. The Union Pacific railroad tracks and yard extend north-south along the entire eastern boundary of the area, limiting access from the South Oroville neighborhood and other areas to the east. (Access from the east can occur via Oro Dam Boulevard to the north or Ophir Road to the South.) Although peak-hour congestion occurs on Oro Dam Boulevard (particularly at its intersection with Feather River Boulevard) and occasionally at the Georgia Pacific/SR 70 intersection, traffic within and to the Industrial Area is generally light.

Historic and Current Land Use

Oroville (under the original name of Ophir City) first rose to some prominence as a town supporting the rapidly growing gold mining activities that occurred along the Feather River and in the surrounding foothills during the latter half of the 19th and early 20th centuries. Railroad tracks connecting Oroville with the San Francisco Bay Area, Sacramento and points east and north first passed through the eastern Industrial Area in the 1880s. Substantial rail yard maintenance facilities were developed as Oroville became an important passenger, shipping and maintenance hub for the Western Pacific Railroad.

Between the railroad tracks and the Feather River large portions of the alluvial cobbles beneath today's Industrial Area were dredged for gold to depths of 40 feet or more by a number of different companies from the early 1900s through 1936 (EPA, 1995). In a process that thoroughly overturned the alluvial substrate, cobbles were brought to the surface, separated from their gold-bearing sands (which were then further processed), and deposited in long rows – remnants of which are still present.

There is limited information regarding land use in the Industrial Area between the end of dredging and the 1980s. Various environmental review documents make note of the substantial Western Pacific Railroad facilities, including a roundhouse, fueling depot, repair shop and storage. Various lumber mills preceding the currently operating Sierra Pacific facility have been present for decades.

Figure 3. Historic Photo: Western Pacific Roundhouse

Today the Industrial Area currently contains some 300 parcels ranging in size from about one half acre to 116 acres with an average size of about 5.5 acres. Less than one-fifth of the Industrial Area parcels appear to be in some use as indicated by structures, machinery, parking lots or storage areas.

Surrounding land use includes commercial strip retail along Oro Dam Boulevard to the north. On the west, Feather River Boulevard contains a mix of commercial, manufacturing, storage and retail uses, a cemetery, and a number of undeveloped parcels. East of the former Western Pacific Railroad right-of-way (now owned by the City of Oroville) is the unincorporated neighborhood of South Oroville. To the south, across Ophir Road, are larger parcels with scattered rural residential development that continues south about three miles to the unincorporated community of Palermo.

Until the State of California ended the Enterprise Zone program on December 31, 2013 the Industrial Area was within the Oroville Enterprise Zone and available for various incentives to encourage the development of businesses. However, the Industrial Area remains within the Recycling Market Development Zone (RMDZ), a state economic development program that provides loans, technical assistance, and free product marketing to businesses within the zone that use materials from the waste stream to manufacture their products. Recycling includes an increasingly diverse, sophisticated and widespread range of activities and products, and could represent a significant land use in the future Industrial Area.

Contaminated Areas

As discussed in Section 2, these design options include various recommendations for infiltrating stormwater into the site substrate. Such a practice may not be advisable when groundwater is near the surface and, in particular, when that groundwater is contaminated. At various times the Industrial Area has contained three different federal superfund sites (see Figure 1) and certain areas may be subject to other contamination. The three superfund sites (Koppers, Louisiana Pacific, and Western Pacific) each involved various types of surface and groundwater contamination. All have been remediated. The Louisiana Pacific site has been removed from the superfund list and is no longer subject to inspections or land use limitations. The Koppers and Western Pacific sites are still subject to inspections and restricted to certain land uses that would not involve significant exposure of the public.

Recent soil analysis in and around the Industrial Area indicates that dioxin contamination from past accidents may still be present in soils (Julia Murphy, Butte Environmental Council, personal communication). Pending further study, ground-disturbing activities in the Industrial Area (including the stormwater management features discussed in Section 2) can be accompanied by site specific evaluation to determine what risk, if any, is present.

Potential Future Growth

As noted, the Industrial Area remains substantially underutilized. The nature of industrial activity – its products, processes and employment – is in transition in California and the United States. While analysis of future demand for land in the Industrial Area is beyond the scope of this document, industrial activities could include materials processing, product manufacturing, shipping, recycling, and storage of raw and finished products. The ability of the Industrial Area to attract future business will depend upon a variety of factors, including the availability of land with sufficient infrastructure, good connections to the regional transportation network, and the flexibility to design sites to suit specific industrial uses.

These design options may be implemented in an incremental manner that is adaptable to the specific demands made by various industrial processes. Although the context for these design options is for industrially oriented activities and forms of land use, their basic principles are applicable to any type of development and may be adjusted should future land use change in the Industrial Area.

Environmental Setting

Climate

The Oroville area is characterized by a Mediterranean climate with generally hot, dry summers and cool, wet winters. As indicated in Figure 4, average monthly temperatures range from 42 to 96 degrees Fahrenheit and rainfall occurs primarily between October and May.

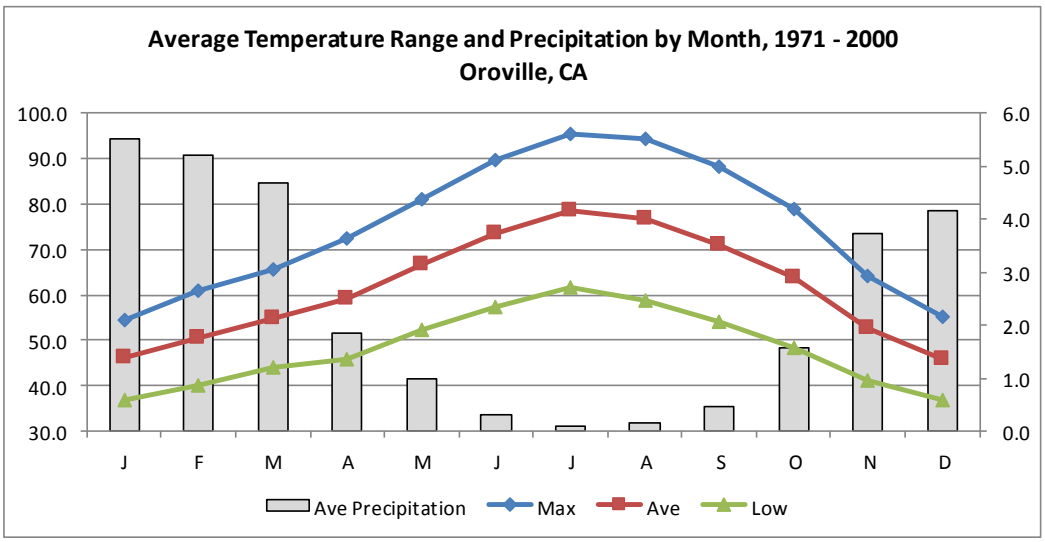


Figure 4: Average Temperature and Precipitation

The average monthly precipitation belies the occasionally energetic Pacific storms passing across northern California that produce intense rainfall and momentarily significant runoff. Residual oils from vehicles, along with other pollutants, sediment and debris, tend to build up on street surfaces during the dry months and, with the first sufficient runoff, are flushed into local storm sewers and drainages. Over time, a portion of these pollutants make their way into the underlying substrate or the Feather River, with the potential to degrade water quality.

Conversely, relatively high temperatures during the summer months are amplified by a heat island effect from streets and parking lots that lack tree shade, increasing peak energy demand, air conditioning costs, and degrading local air and water quality.

Topography and Soils

Topography and soil permeability are key factors in evaluating the potential stormwater management options presented in Section 2. Aside from scattered stockpiles of dirt and a few remnant piles of dredger tailings, the Industrial Area is largely flat, with a very mild average grade of one percent sloping from the northeast to the southwest.

The Industrial Area is primarily comprised of Xerothents and Thompson Flat soils. Although past dredging for gold thoroughly overturned the alluvial substrate beneath the Industrial Area, the portion containing Xerothents has retained its permeability and is classified as Hydrologic Soil Group A. The Thompson Flat and other site soils, reflecting their non-alluvial parent material, are classified as Hydrologic Soil Group B and exhibit somewhat less permeability.

Surface and Groundwater Hydrology

The Industrial Area surface hydrology is primarily characterized by percolation to an underlying shallow aquifer or conveyance by a limited system of above and below ground stormwater culverts and pipes to the Feather River or one of several small detention ponds scattered throughout the area. With sufficient rainfall, localized flooding occurs in various parts of the Industrial Area and east of the Western Pacific railroad right-of-way, where runoff at the base of South Oroville collects.

Figure 5. Unnamed Seasonal Creeks Draining to the Feather River

The primary drainage to the Feather River through the Industrial Area's is the constructed channel generally known as Dry Creek. Following property boundaries from the northeast to the center of the Industrial Area's western border, Dry Creek passes beneath Feather River Boulevard and Highway 70 and, when sufficient runoff is present, empties into the Feather River.

Largely dry during the summer months, Dry Creek can carry significant flow through to the Feather River when there is enough rainfall and runoff in its drainage area. Its function as a storm drain for the Industrial Area is somewhat unusual as most of its flow originates in the hills east of downtown Oroville and the nearby streets, rooftops and parking lots of the city itself. With sufficient rainfall and runoff, impermeable surfaces near Dry Creek may contribute to its flow, but there is relatively little runoff from the largely undeveloped Industrial Area as rainfall largely percolates into the substrate beneath where it falls. Again however, runoff from the Industrial Area into Dry Creek and the Feather River will increase with development. In addition to the design options presented in Section 2, the Dry Creek channel itself offers opportunities for measures to improve the quality of water that flows through it, including revegetation and channel work to maintain capacity.

Readily available information regarding groundwater beneath the Industrial Area is limited. Groundwater studies for various projects and remediation efforts indicate shallow and deep aquifers separated by a relatively impermeable layer of clay. The dredge tailings, which may be

as deep as 30 to 45 feet, generally constitute the shallow aquifer. Beneath the dredge tailings lies older alluvium that was deposited by the ancestral Feather River, forming a part of an aquifer of regional extent. Groundwater movement in the shallow aquifer is generally from north to south and, in the western portion of the Industrial Area, appears to be influenced by the level of the nearby Feather River.

To the extent that site-specific studies have been done, the top of the shallow aquifer appears to vary across the site but can be quite near the ground surface. For example, according to the geotechnical study done for a large retail store planned on Feather River Boulevard, the depth to groundwater is 4 to 6 feet below ground surface. To the east, at the former Western Pacific Superfund Site, remediation studies indicate a shallow aquifer depth of 60 feet below ground surface. To the south, at the former Louisiana-Pacific Superfund site, the shallow aquifer extends in places from the ground surface to 20 to 40 feet below where gold dredge tailings are found.

Vegetation and Wildlife

Aside from isolated stands of trees, vegetation in the Industrial Area largely consists of non-native weed and shrub species that typically colonize disturbed lands where the Sierra foothills meet the Sacramento Valley. Small stands of oak, eucalyptus and other non-native trees may be found east of the railroad tracks. To the southeast, in the low foothills (outside the Industrial Area), more significant stands of oak are located. Some riparian vegetation has become established in the Dry Creek channel, although it is generally choked with invasive grasses and shrubs.

A search of the California Natural Diversity Database reveals no occurrences of special-status plants or wildlife within the Industrial Area itself. The Feather River, less than a half mile west of the Industrial Area, is designated as critical habitat for four species of fish and supports riparian habitat for a wide variety of plant and animal species.

1.3 Improving Industrial Area Environmental Performance

This section discusses some of the particular spatial requirements of lands for industrial use, the water and air quality impacts associated with those requirements, and options to address those impacts.

Industrial Land Use

Lands subject to light and heavy industrial use have certain spatial requirements that are dictated by the typically ground-level nature of their activities and a need for safe and efficient access by trucks and, to some extent, rail. The resulting built environment is characterized by a horizontal, low-density profile connected by wide roads with generous turning radii to accommodate trucks. Individual sites are planned around their particular use, with a relatively large amount of non-structure space devoted to the loading and unloading, queuing, and parking of large trucks necessary for the delivery and shipping of materials and products. As industrial processes and associated storage tend to involve big, single-story structures in order to take advantage of scale economies for their operation, the result, when coupled with space for trucking and other vehicles, is often an abundance of impermeable paved surfaces and rooftops that can lead to considerable surface runoff with sufficient rainfall. In addition, truck size and the wide roads they require can make the cycling and walking environment less safe and enjoyable, discouraging their use as a means of getting to and from workplaces.

Impermeable Surfaces and Water Quality

Conversion of undeveloped to developed lands typically involves the incremental replacement of permeable, vegetated land cover with impermeable surfaces such as roads, parking lots, outdoor storage areas, and rooftops. Removal of vegetation, compaction of soils during construction, and the impervious surfaces that come with parking lots, roads and rooftops, act together to alter the natural distribution and flow of water across the area. Infiltration, interception, and evapotranspiration are diminished and a greater percentage of rainfall becomes surface runoff.

When a traditional stormwater sewer system is present, imperviousness leads to the deterioration of aquatic ecosystems in two fundamental ways: first, increased runoff efficiently collects debris and various pollutants found on pavement such as exhaust and oil residues, transporting them in suspended or dissolved form to receiving waters such as a Dry Creek and the Feather River. Second, the increased peak flows and runoff durations can cause significant changes to stream channel stability, eroding banks, transporting fine sediment, and thereby degrading aquatic habitat in a process referred to as hydromodification. So-called "non-point pollution" from stormwater runoff has long been identified as a primary contributor to water quality impairment in many of the nation's streams, lakes, estuaries, and bays. Imperviousness and the loss of vegetation are thus key variables in managing stormwater in urban environments, common denominators for developers, planners, engineers, scientists, and officials trying to protect and improve local water quality.

Current water quality regulations reflect this concern. Section 303 of the federal Clean Water Act requires states to adopt water quality standards for all surface waters, based on two fundamental characteristics: the designated beneficial uses of the water body in question and the criteria that protect them. The City of Oroville is within the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB); designated beneficial uses for the Feather River include municipal and domestic water supply, agricultural irrigation, navigation, recreation (including fishing, canoeing, rafting, and aesthetic enjoyment), and preservation and enhancement of warm and cold freshwater habitats for fish and invertebrates (including migration, spawning, and riparian habitat).

The National Pollutant Discharge Elimination System (NPDES) permit program was established within the Clean Water Act to regulate broad categories of municipal and industrial discharges to surface waters of the United States, including point-source municipal and industrial waste discharges, and nonpoint-source stormwater runoff. Pursuant to Section 301(a) of the Clean Water Act, discharges to waters of the United States (such as the Feather River) are prohibited unless they are in compliance with an NPDES permit.

A part of the NPDES permit program are the Phase II Stormwater Rules for small municipal separate stormwater sewer systems (small MS4s) that apply to municipalities with fewer than 100,000 people. First adopted in 1993, the Phase II Stormwater Rules have evolved with a focus on controlling the effects of runoff from impermeable surfaces to stream channels and water quality. Specific best management practices to reduce the impacts of development and urbanization are based upon the following general strategies:

- Optimize infiltration
- Protect critical areas
- Minimize pollutant transport to receiving waters
- Provide long-term watershed protection

In response to concerns regarding its stormwater runoff to the Feather River, the Central Valley

RWQCB is requiring a small MS4 permit for the City of Oroville storm sewer system (including Dry Creek and its contributing drainages in the Industrial Area). The City will therefore seek to manage stormwater flowing across Industrial Area streets and into its drainage system.

Two other NPDES permits may also be applicable on private land in the Industrial Area, depending upon a project's size and operational characteristics. Construction resulting in a disturbance of greater than one acre is subject to a Construction General Permit and a General Industrial Stormwater Permit is required for stormwater discharge from industrial facilities such as:

- industrial plant yards;
- material handling sites;
- refuse sites;
- areas receiving process waste waters;
- storage and maintenance areas; and
- immediate access roads and rail lines used by carriers of raw materials, manufactured products, waste material, or by-products used or created by a facility.

These design options will address the requirements of the small MS4 and any industrial and construction stormwater permits that may be required in the future.

Improving Access for Cyclists and Pedestrians

The primary function of streets within the Industrial Area is and will be to provide safe and efficient access for the businesses locating there, facilitating the delivery and export of materials, goods and products, and allowing for access by customers, vendors and employees. The truck (along with some rail) will be the primary mover of materials, goods and products. Customers and vendors will come and go by in small trucks, vans and automobiles. Employees, too, will likely rely on the private auto for their daily commute. It is worth noting, however, that the Industrial Area's proximity to surrounding residential neighborhoods in the Oroville area makes public transit, cycling and walking viable alternatives to the private auto as a means of getting to and from work.

Environmental review for future projects in the Industrial Area will include evaluation of traffic, air quality and greenhouse gas impacts. To the extent that potentially significant cumulative impacts are predicted, mitigation will be required as part of the individual project permitting process. A consistent approach to reducing traffic congestion, air quality emissions and greenhouse gas production is a street network that provides for public transit, cycling and walking as alternatives to the personal vehicle for commuting. As discussed in Section 3, these design options support Industrial Area street design that accommodates cycling and walking with the particular spatial requirements of trucking.

An Integrated Approach for Improved Stormwater Management and Access

While seemingly disparate concerns, reducing impacts to air and water quality may be accomplished by designing a street system and facilities in a way that encourages transit, cycling and walking while also minimizing stormwater runoff. In one respect, the City of Oroville is fortunate in that much of the Industrial Area is presently undeveloped. The strategies and techniques presented in Sections 2 and 3 are flexible and may be implemented incrementally with development in a manner that will result in an integrated system to promote and maintain air and water quality into the future.

2 STORMWATER MANAGEMENT

Stormwater management has generally relied on separate storm sewer systems to move runoff as quickly as possible from where it falls on the developed landscape into a receiving water body.

Recent trends in stormwater permitting emphasize a Low Impact Development (LID) approach to managing runoff in order to minimize impacts to water quality and receiving waters such as streams.

Low Impact Development is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features or minimizing effective imperviousness to create functional and appealing site drainage that treats stormwater as a resource rather than a waste product. There are many practices that have been used to adhere to these principles such as bioretention facilities, rain gardens, vegetated rooftops, rain barrels, and permeable pavements. By implementing LID principles and practices, water can be managed in a way that reduces the impact of built areas and promotes the natural movement of water within an ecosystem or watershed. Applied on a broad scale, LID can maintain or restore a watershed's hydrologic and ecological functions.

LID has been characterized as a sustainable stormwater practice by the Water Environment Research Foundation and others. LID can be applied to new development, redevelopment, or as retrofits to existing development. LID has been adapted to a range of land uses from high density ultra-urban settings to low density development.

2.1 Objectives

Impacts to water quality and the Feather River may be expected with increasing volumes and rates of stormwater flow from a developing Industrial Area. These design options support site design and stormwater management practices that:

- manage stormwater as close as possible to where it falls
- minimize pollutant transport in stormwater runoff
- reduce impacts to Dry Creek and the Feather River resulting from alterations to the area's natural hydrology, and
- meet the requirements of federal, state and local stormwater regulations.

2.2 Low Impact Development

Green Infrastructure

The fundamental goal of LID is to prevent developed sites from causing measurable harm to receiving waters such as streams while preventing any flooding in, or other damage to, the built environment. Low Impact Development (LID) is referred to as "green infrastructure" because it mimics natural hydrologic processes in a developed landscape to manage stormwater runoff. Rather than a conventional storm sewer system, LID variously relies upon an integrated system

of decentralized, small-scale control measures to intercept, detain, retain, infiltrate and transpire stormwater as close as possible to where it falls. Because it minimizes runoff and is highly adaptable to site specific circumstances, LID offers several benefits relevant to stormwater permitting, including improving local water quality, reducing impacts to streams resulting from altered hydrologic cycles and requiring less expense to construct and maintain than traditional storm sewer systems. If well-designed, LID features such as vegetated swales, “rain gardens” and trees can also improve aesthetics, assist in marketing a business and enhance property values.

LID Strategies and Tools

The LID approach to manage stormwater includes two complementary strategies: (1) pre-construction site design measures that minimize the causes of excessive runoff; and (2) specific post-construction source controls to mitigate stormwater impacts that site design cannot avoid. Both of these strategies - site design and source control - should be evaluated and planned in an integrated fashion prior to construction.

Phase	Site Design Principles	Source Control Principles
Planning	• Preserve natural infiltration capacity and existing drainage patterns	N/A
Design	• Minimize impervious area • Disconnect impervious areas	• Infiltration BMPs • Capture/Reuse BMPs • Filtration BMPs
Construction	• Minimize construction footprint, unnecessary compaction, and removal of native vegetation and trees	• Revegetate disturbed areas
Occupation	• Implement source control BMPs	• Maintain BMPs

Table 1. LID Site Design and Source Control Principles

Source: The Low Impact Center

Site Design

Following is further information about key site design principles for Low-Impact Development:

Conserve existing natural areas. Although vegetation is scarce and largely non-native in the Industrial Area, any trees and wetlands should be considered for preservation and enhancement when feasible. Swales and depressions should also be evaluated for their potential to infiltrate or detain runoff and be vegetated.

Figure 6. Open Areas and Abandoned Facilities

Minimize the project's impervious footprint. Reducing a structure's footprint generally involves building up rather than out (increasing its floor to area ratio). Although this may not be feasible for buildings serving an industrial function, parking lots and other paved areas should be kept as small as possible and pervious surfaces should be considered for any areas that do not need to support heavy vehicles. Adjacent properties can consolidate parking along an adjacent property line such that the lot has one encroachment onto the street rather than two.

Figure 7. Permeable Pavement Schematic and View

Disconnect impervious surfaces. Disconnecting impervious surfaces from the drainage system and managing runoff where (or near where) it falls can greatly reduce the amount of stormwater conveyed to Dry Creek and the Feather River. Disconnecting runoff flow can be done at any number of places, such as where the downspout empties rainfall from a rooftop, in landscaped swales adjacent to or within a parking lot and along streets, and with pervious surfaces such as pavers.

Figure 8. Parking Lot Rain Garden and Perimeter Permeable Area

Minimize soil compaction. Facility design should take advantage of a site's existing ability to infiltrate and store stormwater. Soil permeability should be evaluated prior to site development to identify where infiltration may best be accomplished. While soils supporting structures must meet applicable building codes, compaction of surrounding soils should be minimized during construction to assure their pre-construction permeability is maintained.

Figure 9. Soil Compaction; Vegetated Area Left Uncompacted

Construct streets to the minimum width necessary and include landscaping for stormwater management. Streets act as significant conduits for stormwater, efficiently collecting and delivering runoff to the drainage system. Minimizing their width while maintaining safe and efficient use reduces the amount of impervious surface. Strategically placed landscaping such as trees and vegetated swales will slow runoff and remove contaminants picked up from street surfaces.

Source Control

Depending upon site-specific conditions and facility requirements, site design strategies alone may not be able to adequately mitigate stormwater runoff impacts. In such cases, best management practices can be effective in further minimizing the stormwater runoff. Source control seeks to infiltrate, intercept, store, and transpire stormwater runoff, thereby improving the quality, and reducing the rate and volume, of runoff delivered to receiving waters.

Several source control techniques are discussed below.

Retain or plant trees, shrubs and grasses. Street trees, shrubs and grasses provide several source control functions: intercepting rainfall and runoff, reducing their erosive power; helping rainfall infiltrate into the surrounding substrate; and storing and transpiring moisture.

Figure 10. Street and Parking Lot Plantings

Capture and Reuse Rainwater. Rain may be captured, stored and reused or slowly released to the environment in a variety of ways: rain barrels and cisterns receiving runoff from roofs and parking lots, and strategically placed detention basins capturing runoff from larger areas. Captured water can be used to irrigate landscaping or recharge groundwater.

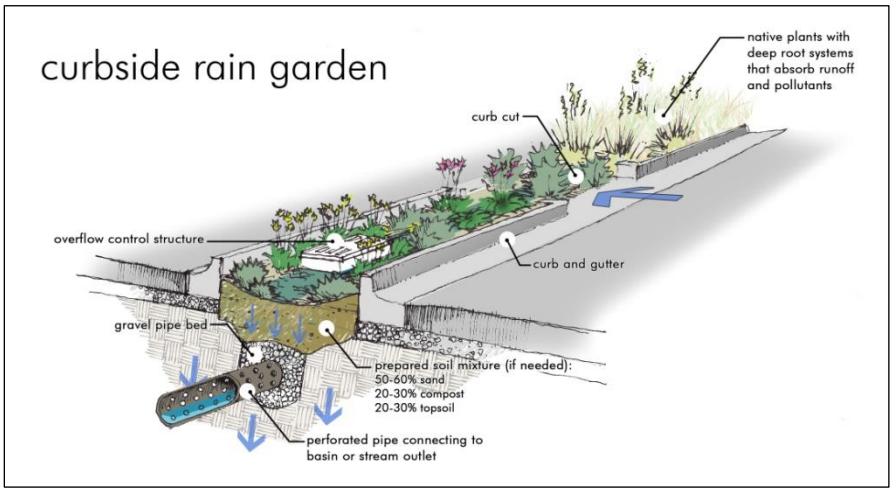


Figure 11. Rain Garden Schematic

Install Green Roofs and Walls. Green roofs and walls also use vegetation to control rainfall and runoff. Green roofs are a composed of a multi-layer garden on a roof that filters, absorbs and detains rainfall that, with a conventional roof, is drained to the ground level as quickly as possible. Green roofs consist of a specially designed, lightweight soil media that is underlain by a drainage

layer and a high quality impermeable membrane that protects the building structure. The soil is planted with a specialized mix of plants that can tolerate both the typical hot, dry conditions and the periodic inundation from storms that characterize a rooftop environment.

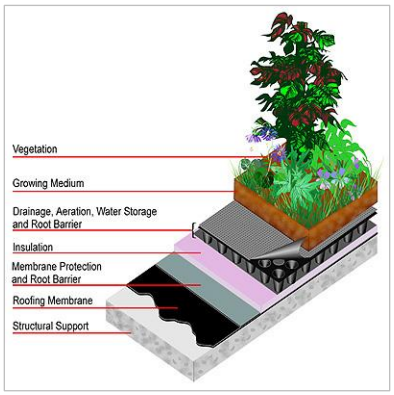


Figure 12. Green Roof: Schematic and Installed

Similarly, green walls are a kind of vertical garden climbing or actually planted on the exterior walls of a structure. Green roofs and walls significantly reduce both stormwater runoff and the heat island effect, improving the quality of stormwater runoff while also cooling the air through evapotranspiration.

Figure 13. Green Roof with Solar Array; Green Wall

Pervious Pavements.

Pervious pavements include a wide variety of surfaces designed to allow stormwater infiltration into the substrate, such as pervious concrete, porous asphalt, concrete pavers, paving stones, aggregate, and plastic turf reinforcing grids and other grid-cellular systems. Pervious pavements are intended to replace the effective impervious areas represented by standard asphalt and concrete surfaces.

Pervious pavements may clog with sediment and do require maintenance – usually vacuuming with a specialized vacuum. Although pervious pavements may not be suitable for heavier vehicles such as trucks, they function well in parking lots for cars and smaller vehicles, and on sidewalks and paths.

Figure 14. Integrated Permeable Facilities

Managing Phosphorus Leaching from LID Facilities

Recent studies by Washington State University, North Carolina State University, the Wisconsin Department of Natural Resources and others have demonstrated a need to manage leaching of dissolved phosphorus from LID facilities such as green roofs and bioretention swales into downstream waters. Excessive dissolved phosphorus promotes algae blooms, eutrophication, and degradation of aquatic habitat.

Plants should be selected to minimize the need to apply fertilizers, which often contain high levels of phosphorus. Compost content of the facility's soil should also be limited. Amendment of the soil with as little as 5 percent of phosphorus-adsorptive media can also correct the problem. LID sand filters, as well as soil filters, can be amended in this way to better capture dissolved phosphorus.

3 ACCESS

The viability of future Industrial Area businesses will depend in part upon safe, efficient access by vendors, customers, employees and others on its streets. Given the substantial impact impermeable roadway surfaces have upon stormwater runoff and water quality, Section 3 provides important options for designing streets consistent with LID principles. In order to satisfy these multiple goals – efficient and safe access for diverse users while also minimizing stormwater runoff impacts – access to the Industrial Area streets should be considered in a comprehensive fashion that includes the entire domain of the street: bicycle and vehicle lanes, sidewalks and landscaping.

3.1 Objectives

To accommodate different users and uses, and minimize stormwater runoff and air quality impacts, these design options support the following objectives for Industrial Area streets that:

- Comprise a balanced, integrated whole allowing for the various needs of vehicles, cyclists and pedestrians;
- Signal the boundaries and relationships between different travelers and travel modes for safe, efficient movement around the Industrial Area;
- Provide safe connections with surrounding neighborhoods to encourage cycling and walking to and from the Industrial Area; and
- Incorporate LID features into street landscaping.

These objectives require a balance between the needs of large and small vehicles, pedestrians, cyclists, and stormwater management to achieve a safe, efficient and comfortable street system that has a minimal impact upon stormwater runoff.

3.2 General Considerations

As a preliminary approach to identify options for the design of Industrial Area streets, the following observations and assumptions are made.

Users and Transport

The primary users of future Industrial Area streets are assumed to be the vendors, customers and employees associated with its businesses, traveling by foot, bicycle and vehicles ranging in size from large trucks to public transit to the private auto. Lane widths, intersections, turning radii and other features should be able to accommodate access by delivery trucks and other large vehicles. At the same time the street should include adequate space for cycling, walking and landscaping.

Vehicle Speeds and Proportion of Through Traffic

Vehicle speed influences requirements for lane width and intersection design, and has well-understood implications for the mobility and safety of other vehicles, cyclists and pedestrians. In general, larger vehicles are more difficult to maneuver and take longer to stop than smaller vehicles. Aside from the obvious desire to avoid injury, the perception of safety also has a significant influence upon whether or not those who wish to cycle or walk do so. Pedestrians and cyclists feel less safe with increasing vehicle (especially truck) speeds and the potential for conflict at key areas such as intersections.

The proportion of through versus local traffic for the future Industrial Area is unknown but may be expected to increase with growth in the surrounding areas. Use of the Industrial Area roads as a shortcut around the sometimes congested Highway 70 and Oro Dam Boulevard interchange may be practical at certain times of the day (for example, via Ophir Road or Georgia Pacific and 5th Avenue). However, these design options are focused on access to and within the Industrial Area. In keeping with street design that accommodates local trucking, pedestrians and cyclists, the higher speeds and greater number of lanes that might be planned for through traffic are not included in these design options.

The current speed limit in the Industrial Area is 25 mph. Given its relatively small area (one by two miles), and an emphasis on local (as opposed to through) traffic use, a maximum speed of 25 mph provides a reasonable balance between the efficiency of vehicular access and pedestrian/cycling safety and comfort.

Encroachments into the Public Right-Of-Way

Access from private land to a public right-of-way poses a well-understood risk of conflict between

vehicles entering and exiting individual properties and traffic on the street. Due to past subdivisions in the Industrial Area, there is a potential for numerous encroachments (driveways) onto its principal streets from adjacent properties. For example, there are 63 and 33 parcels fronting along the roughly one and one half mile lengths of 5th and 7th Avenues, respectively, between Oro Dam Boulevard and Georgia Pacific Way.

One approach to reduce the number of encroachments is to consolidate access to individual properties with a shared driveway. While consolidation of private driveways and parking lots is generally desirable for improved safety and reduced cost, it may not be possible given the size of a parcel, the facility footprint that develops on it (structures, parking lot, loading areas, etc.), and other factors. These design options therefore do not take into account the number of access points per se, but merely assume that the design of the street domain – vehicle and bike lanes, sidewalks and landscaping – will incorporate those encroachments in a manner deemed safe and appropriate by the Oroville Public Works Department.

Physical Constraints

Physical constraints on the roadway system include the width of the public right-of-way within which to construct the different components making up the street domain, changes in elevation and grade, existing and future utilities, and the angles of intersecting streets.

As noted, the public right-of-way for most of the Industrial Area's principal streets appears to be 60 feet in width, with the exception of Georgia Pacific Way, which has an 80 foot public right-of-way for most of its length. It may be possible to negotiate easements with willing landowners to increase the right-of-way width by five to ten feet on one or both sides of a street to create more options for placement of sidewalks, utilities and landscaping.

Physical limitations due to abrupt changes in elevation or grade are generally not an issue in the largely flat Industrial Area. Existing utilities include electric and gas lines, sanitary sewers, and a limited storm sewer system. The proposed design options assume an ability to avoid or incorporate utilities beneath sidewalks and/or bicycle lanes.

Roads intersecting at non-perpendicular angles can complicate intersection design, especially when lanes for pedestrians and cyclists are included. Roads in the Industrial Area have been laid out in a largely orthogonal north-south and east-west manner and cross perpendicular to one another.

3.3 Complete Streets

Streets that provide for a variety of users and functions – in this instance, a full range of vehicles, cyclists, pedestrians and landscaping for stormwater management – according to the local land use context are referred to as "complete streets". Over the past decade complete streets have been implemented throughout California and the United States, typically for retail, mixed use and residential districts that tend to have lower levels of large truck use than might be expected for the Industrial Area. Accommodating pedestrians, cyclists and landscaping with the particular spatial and safety needs of large trucks poses unique concerns regarding components of a street domain that may be divided into a **travelway** and what might broadly be termed a **pedestrian zone**.

The travelway includes vehicle travel lanes, intersections, mid-block crossings and medians. The pedestrian zone includes on-street parking, landscaping and the sidewalk. Bicycle lanes or paths may be located in either the travelway or the pedestrian zone.

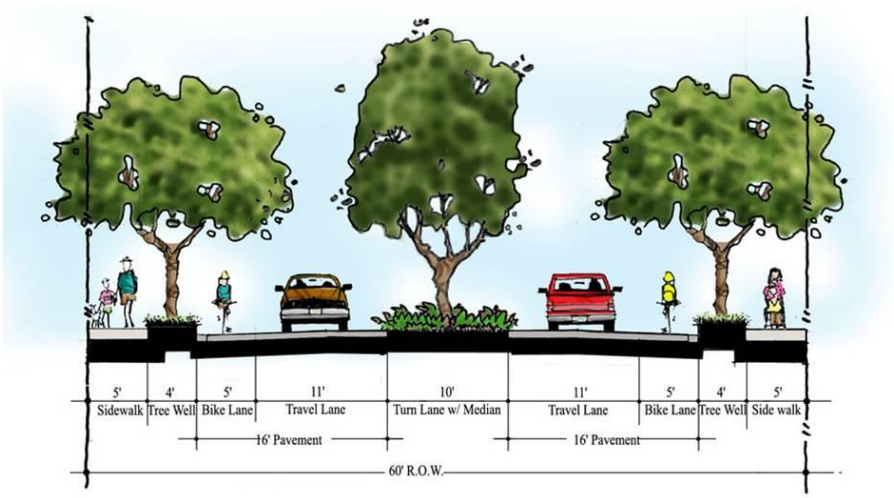


Figure 15. Potential 60-Foot ROW Configuration with Median

In support of the objectives for access noted at the beginning of this section, each of these components must be allotted space within the right-of-way. **Figure 15** shows several of the many configurations that are possible for 60-foot right-of-ways.

The Travelway

The primary purpose of the travelway is to accommodate safe mobility for vehicles and, if bicycle lanes are included, cyclists. The functional characteristics for potential travelway components in the Industrial Area are evaluated as follows.

Travel Lanes. The number of travel lanes and their width is generally informed by the planned vehicular level of service, which is in turn influenced by amount of local and through traffic, vehicle mix, and speed(s) anticipated. Currently, all Industrial Area streets have two lanes, one for each opposing direction. As noted in Section 3.2, a design speed of 25 miles per hour is reasonable given the small size of the Industrial Area and the focus on access to its businesses.

In order to preserve space for pedestrians, cyclists and landscaping, two opposing travel lanes separated by a center median provide a reasonable balance between the needs of vehicles and those of cyclists, pedestrians and landscaping.

Following AASHTO guidance, a travel lane width of 12 feet and a median width of 12 to 14 feet are acceptable for large trucks in industrial districts where speeds are less than 25 mph.

Medians. The median accommodates left hand turns and, where turns are unnecessary, landscaping and space for designated pedestrian mid-block crossings. Median width is dictated by the functional characteristics of the street; omitting medians provides more space for travel lanes or other components such as parking lanes, but makes mid-block crossings more difficult. A narrow median – for example four to six feet wide – is not adequate as a turning lane but does serve to separate opposing traffic and can provide landscaping, perhaps including certain tree species. In order to allow for left-hand turns, the median should be at least 12 (preferably 14) feet wide for trucks. Where left hand turns are not necessary, such a median would allow for street trees and landscaping to shade asphalt and receive stormwater from the adjacent lanes. A two-

foot wide off-set is recommended between a median curb and the travel lane if there is sufficient right of way width.

Intersections. Generally the most complex component of the street domain, intersections must provide an acceptable level of service while balancing variable traffic load, large vehicle turning requirements, and pedestrian/bicycle safety and convenience. The users passing through intersections are in close proximity with one another, involved in diverse activities that frequently present a potential for conflict.

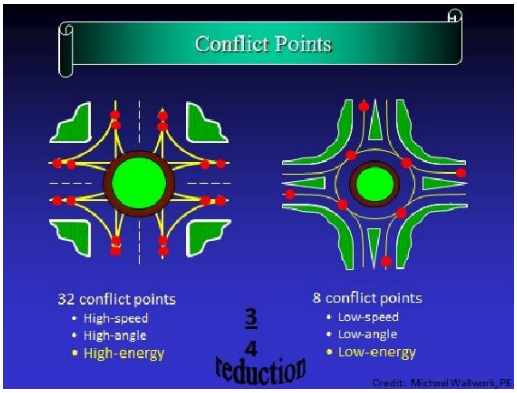


Figure 16. Intersection and Intersection Design Options

Intersection design includes the approaches, medians, encroachments from adjacent land uses, sidewalks, bike lanes and landscaping. Curb extensions at the corner are useful for traffic calming and making pedestrians more visible. Pedestrian islands could be considered for intersections in the Industrial Area with low-speed channelized right turns to accommodate the turning radius needs of large vehicles. Depending upon the amount of traffic and available right-of-way, a roundabout may be able to provide an appropriate balance between vehicular level of service and pedestrian/cyclist safety.

Mid-Block Crossings. The preferred locations for pedestrian crossings are at intersections. However, when blocks exceed 400 feet, a mid-block crossing can provide safe crossing opportunities for pedestrians and cyclists. With curb extensions, mid-block crossings also provide opportunities for landscaping and traffic calming.

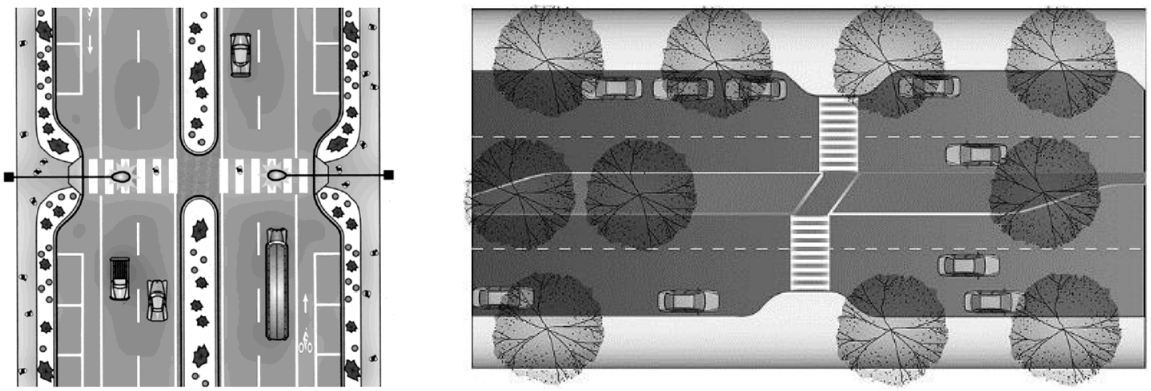


Figure 17. Mid-Block Crossing Design Options

The Pedestrian Zone

A functional, safe and comfortable pedestrian domain, which includes on-street parking, the sidewalk, landscaping, utilities, and access to adjoining businesses and properties, is essential to encourage walking. Pedestrian zone components are discusses as follows.

Sidewalks. As the primary pedestrian component in the street domain, sidewalks provide walking access to adjacent land uses and bus stops. In general, the minimum width for a sidewalk that allows two people to comfortably pass one another is four feet. The minimum passing space for two wheelchairs is five feet. Landscaping and/or a parking lane provide a buffer between pedestrians and passing traffic. An additional buffer may be provided if a bicycle path is separated from the travel lane.

On-Street Parking. Provision of on-street parking is generally considered when adjacent land uses are unable to provide adequate space for employees, customers and others driving to a particular business. Parking lanes for cars and small trucks should be at least seven feet wide and 10 feet wide for large trucks. On-street parking reduces the impermeable coverage necessary for off-street parking but of course increases the amount of that coverage on the street.

The relatively large Industrial Area parcel sizes should generally allow individual businesses to accommodate their own parking. However, some on-street parking for autos and small trucks may be desirable in those areas where parcels are smaller. As noted, most of the Industrial Area streets have a 60-foot public right-of-way (excepting Georgia-Pacific Way). If vehicles, bicycles, pedestrians and landscaping are to be accommodated within the 60-foot right-of-way, there is not enough space for a seven foot wide parking lane. However, in those areas adjacent to smaller parcels, some on-street parking could be interspersed with the landscape buffer. Parking can also be offered on only one side of the street or it can alternate from one side to the other, interspersed with landscaping.

Landscaping and Street Trees. Landscaping and street trees provide multiple benefits for the street domain. Rain gardens or vegetated swales receive stormwater runoff from the street and provide a visual amenity. As discussed, trees intercept and transpire soil moisture, cool streets with their shade, and provide particular aesthetic benefits. They also clarify the boundary between the travelway and the sidewalk, making the street safer for the pedestrian and the motorist.

Landscape swales can be as narrow as two feet; smaller trees (four inch diameter trunk at maturity) generally require a planting space of four feet while larger trees require six to eight feet or more. All trees need ample room for their root system and consideration of underground utilities is essential not only for trees but for stormwater infiltration goals.

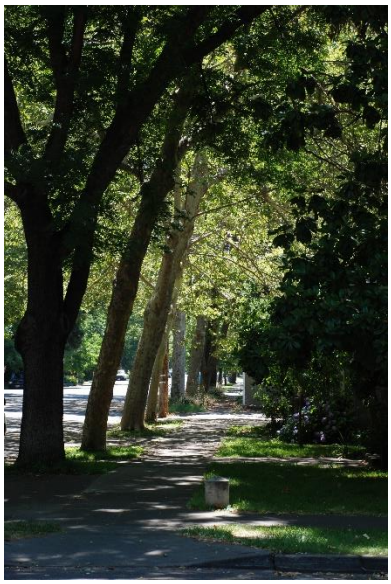


Figure 18. Street Tree Plantings

Bicycle Lanes and Paths

The BCAG Regional Bicycle Plan, following the Caltrans Highway Design Manual and AASHTO design standards, provides the following definitions for three types of bikeways:

- **Class I Bikeways (Bike Paths)** provide a completely separated right of way for the exclusive use of bicycles and pedestrians, with cross-flow by motorists minimized. Bike paths may be two or one-way; the minimum paved width for a two-way bike path is 2.4 m. and the minimum paved width for a one-way bike path is 1.5 m.
- **Class II Bikeways (Bike Lanes)** provide a striped lane for one-way bike travel on a street and have a minimum 1.2 meter width, 1.5 meters where parking stalls are identified, and at least 3.3 meters where parking is permitted but stalls are not identified.
- **Class III Bikeways (Bike Route)** provide connections between Class II bikeways and are generally only marked with a sign. Class III bike routes have no designated widths and cyclists share the street with motor vehicles.

Figure 19. Class I and II Bicycle Facilities

The width of the street, the number of lanes, and the traffic mix, volume and speed are all factors in providing safe bicycle lanes. The type and location of bikeways should be considered within a context that includes the destinations they serve and their interconnectivity with a continuous, area-wide bicycle network. 5th Avenue in the Industrial Area is proposed as a Class 2 bikeway in Butte County's Master Bikeway Plan, connecting areas to the south to downtown Oroville and regional paths along the Feather River.

Evaluation of whether Industrial Area bikeways should be on the street or separated from the street should consider cyclist safety and comfort, and anticipated traffic characteristics. Where significant large truck traffic is expected, bike paths separate from the street provide an additional measure of safety and comfort.

4 DESIGN OPTIONS

Further development of design principles and options for the Oroville Industrial Area could include integration of the LID and complete streets principles discussed in Sections 2 and 3. Businesses and industrial property owners are encouraged to consider the ideas presented here, or to consider other strategies to proactively address regulatory requirements while taking the lead in entrepreneurial innovation and environmental stewardship in the Oroville urban area.